King County Metro Transit Division
2003 LEED™ Assessment Report

Building Construction Projects

Prepared for

King County Transit Division

Prepared by

Paladino & Company, Inc.

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Executive Summary

Section 1: Executive Summary

Introduction

In October of 2001, the King County Executive created the King County Green Building Initiative that requires County projects with applicable scope to attempt to achieve the highest LEED rating possible. For projects where the scope limits the ability to achieve a LEED rating, departments are directed to apply LEED and green design principles wherever possible. In support of this policy, the County Transit Division has identified 13 current projects for LEED assessment in 2003.

King County Map

The Assessment Process

The Transit Division identified 13 of its current projects as "building" projects of the type potentially eligible for a LEED rating in 2003. The Green Building Initiative (GBI) requires an annual report from County departments to track sustainability progress. The Transit Division coordinated with the County Green Team to enlist a Technical Consultant, Paladino & Company, Inc., to perform the assessment and report on division LEED progress in 2003. Building upon the eight projects identified in the King County Transit Division 2002 LEED Assessment Report, an additional five projects were identified. Interviews were conducted with the Project Manager and other team members for each of the 13 projects. The purpose of these interviews was to obtain information and updates about the current status of each project including green features planned for the project, background on the decision making process, successes and challenges faced by the team, and identify any opportunities remaining.

King County Transit Projects

Sustainability principles are being integrated into the design of all 13 Transit Division projects. To facilitate this process, the County has created the Green Team for internal education and support. To build on this initial effort, LEED and Green design tools can be created to streamline the LEED process. The Transit Division is developing a base of experience that continues to grow. These 13 Transit projects can serve as learning tools to guide future green building projects. At the Executive level, in partnership with the Transit Division, priorities, policies, budgets and tools can be further developed to facilitate cost effective sustainability.

Project Types and LEED Applicability

Five project types have been identified as either eligible for a standard LEED rating or having opportunities to integrate sustainable design elements into the project, based on the LEED rating system.

The projects reviewed for the 2003 Report fall into five project types:

1. Office / Office-Industrial

2. Parking Facilities

3. Street Improvements

4. Building Demolition

5. Transit Oriented Development (TOD)

Of these project types, the office projects are of a scope directly addressed by LEED and are being designed to achieve a standard LEED rating. The office projects that also house industrial components, such as bus maintenance and parts repair, could also be designed to achieve a LEED rating. Some interpretation of credit requirements is necessary to accommodate the non-commercial aspects of these projects.

In building types where the number of applicable credits is reduced due to the nature of the project, a LEED Equivalent Rating system is applied. Essentially, this system adjusts the denominator downward to match the applicable credits to provide a relative ratio. This ratio is then matched to the standard LEED ratios (see Section 2, LEED Equivalent Projects for more details).

The parking facilities, which include new employee and park & ride facilities, have fewer elements to which standard LEED building strategies apply. However, opportunities do exist to integrate sustainable design elements into the projects.

The street improvements and demolition project have the fewest elements to which standard LEED building strategies apply. However, the limited green design strategies available to these projects does not preclude projects from excelling at appropriate strategies.

The TOD projects have multiple uses, such as transit center, to parking garage, and to mixed-use development. LEED will be used as appropriate for each type of use.

For each of the five project types, trends and issues were identified, both at the division and project-type level. These will be discussed in Section 3.

Project List

The following is a list of the projects reviewed. Projects are reviewed in detail in Section 2. Projects marked with an asterisk (*) denote new projects added to the assessment process in 2003.

Office / Office Industrial

1. Atlantic / Central Base Tire and Millwright Shop
2. Communications and Control Center (previously the Auxiliary Functions Building)
3. Power Distribution Headquarters
4. Metro North Facilities*

Parking Facilities – Park and Ride, Interim Parking, Employee Parking, Bus Parking

5. Atlantic / Central Base Employee Parking Garage
6. Eastgate Park and Ride / Interim Lot
7. Redondo Heights Park and Ride
8. Issaquah Highlands Park and Ride / Interim Lot
9. Burien Transit Center*
10. Atlantic / Central Base North Yard*

Street Improvements

11. Atlantic / Central Base Street Improvements*

Demolition

12. Atlantic / Central Base Expansion Demolition*

Transit Oriented Development

13. Convention Place Station TOD

Table 1.1: Metro Transit Division Projects and the Green Building Initiative

Project Name	Covered by KCGBI [1]	Expected Points Applicable	Expected Point Achievable	Percent Achievable Range	Expected Rating (from low side of range)	Possible Rating (from high side of range)	LEED Rating or Equivalent LEED Rating
Atlantic/Central Base Tire and Millwright Shop*	Yes	69	27 to 43	39% to 62%	Certified --	Silver	LEED™ Rating
Communications and Control Center*	Yes	69	28 to 46	40% to 67%	Certified --	Silver	LEED™ Rating
Power Distribution Headquarters	No (but opted yes)	69	29 to 32	42% to 46%	Certified --	Certified	LEED™ Rating
Metro Facilities North	Yes	NA	NA	NA	NA --	NA	LEED™ Rating
Atlantic/Central Base Employee Parking Garage*	No (but opted yes)	54	22 to 29	41% to 54%	Certified --	Silver	Equivalent LEED™ Rating
Eastgate Park & Ride / Interim Lot	No (but opted yes)	47	14 to 23	29% to 49%	Not Certified (Certification Equivalent Possible) --	Certified	Equivalent LEED™ Rating
Redondo Heights Park & Ride	No (but opted yes)	47	17 to 25	36% to 53%	Not Certified (Certification Equivalent Possible) --	Certified	Equivalent LEED™ Rating
Issaquah Highlands Park & Ride / Interim Lot	Yes	47	20 to 27	43% to 57%	Certified --	Certified	Equivalent LEED™ Rating
Burien Transit Center	Yes	50	19 to 32	38% to 64%	Not Certified (Certification Possible) --	Certified	Equivalent LEED™ Rating
Atlantic/Central Base North Yard*	Yes	27	12 to 20	44% to 74%	Silver --	Silver	Equivalent LEED™ Rating
Atlantic/Central Base Street Improvements*	Yes	27	11 to 22	40% to 82%	Certified --	Certified	Equivalent LEED™ Rating
Atlantic/Central Base Demolition*	Yes	13	9 to 9	69% to 69%	Gold --	Gold	Equivalent LEED™ Rating
Convention Place Station Transit Oriented Development	Yes	NA	NA	NA	NA --	NA	LEED™ Rating

NA = Not Available as project is in preliminary stage.
* Projects marked with an asterisk (*) can share site ammenities to claim points in the Sustainable Sites section by taking a 'campus approach'
Note[1]: Projects marked "Yes" were in the planning and predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Section 2:

Project LEED Assessments

Project Assessment Process

Table 2.1: LEED Ratings, Percent Points Achieved

Platinum	75%
Gold	57%
Silver	48%
Certified	38%

Paladino and Company interviewed the project managers for Transit projects selected by the division as applicable for LEED assessment. The goal of this assessment is to determine sustainable design progress within the Transit Division with respect to the County Green Building Initiative (GBI). The chart to the left shows the percentage of applicable LEED principles a project must meet in order to achieve LEED ratings levels of Certified, Silver, Gold and Platinum.

Transit Division Projects and the LEED Rating System

Projects in the planning or predesign phase when the King County Green Building Initiative (FES 9-3 (AEP)) was passed in October 25, 2001 are bound by the initiative. There are two categories of projects under the initiative:

1. 'LEED Rated Projects' having scopes addressed by the standard LEED Green Building Rating System that may then apply for LEED certification.
2. 'LEED Equivalent Projects' having scopes outside that covered explicitly by the Rating System where 'equivalent' scoring is applied based on the number of credits applicable to that project and project type.

LEED Equivalent Projects

For LEED Equivalent projects an 'equivalent' scoring system has been developed for the purpose of this assessment. The standard LEED Ratings are based upon achieving a set percentage of available points, as illustrated in Table 2.1. To determine an 'Equivalent LEED Rating', the project is reviewed and credits which are outside the scope of the project type are termed 'Not Applicable' and are removed from the number of total points, or the denominator. The Equivalent LEED Rating is then calculated based on how many of the remaining credits are achieved, i.e. if the project is pursuing and likely to achieve 20 of the remaining 40 points the project would be on track to receive an Equivalent LEED Rating of Silver.

Each project table includes the adjusted denominator, percent of points being pursued, and possible LEED Rating or Equivalent LEED Rating. The credits being pursued are noted as 'Yes' or 'Maybe' depending on the level of information available at the time of the project interview.

Several projects are currently in the design phase. As projects proceed into the Construction Documentation phase, it is important for the design teams to include in the bid and construction documents all LEED-related elements, including items such as instructions to the contractor for construction waste management and construction indoor air quality management, lists of contractor submittals, and LEED selection criteria for materials and products.

The LEED Scorecard

The LEED scorecard in Table 2.2 focuses on five key sustainability areas in addition to an innovations section. Each section lists credits with three columns. The "Y" column denotes credits that are likely to be achieved. The "N" column denotes credits that are not likely to be achieved. The "?" column denotes columns that may be accomplished with added effort. In the case where a credit is not applicable to a project, the "N" column is marked NA for not applicable. Office projects fall within the standard LEED Rating System and count all 69 possible points. Projects that do not fall within the standard LEED scope, such as parking facilities, street improvements, and demolition projects have fewer possible points as reflected in the Equivalent Ratio shown in the individual project scorecards.

Table 2.2: Standard LEED Scorecard

Total Project Score — Possible Points **69**

Certified 26 to 32 points **Silver** 33 to 38 points **Gold** 39 to 51 points **Platinum** 52 or more points

Sustainable Sites — Possible Points 14

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
			Credit 1	**Site Selection**	1
			Credit 2	**Urban Redevelopment**	1
			Credit 3	**Brownfield Redevelopment**	1
			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
			Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
			Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
			Credit 6.2	**Stormwater Management**, Treatment	1
			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
			Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
			Credit 8	**Light Pollution Reduction**	1

Water Efficiency — Possible Points 5

Y	?	N			
			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
			Credit 2	**Innovative Wastewater Technologies**	1
			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
			Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Energy & Atmosphere — Possible Points 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
			Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
			Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
			Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
			Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
			Credit 2.1	**Renewable Energy**, 5%	1
			Credit 2.2	**Renewable Energy**, 10%	1
			Credit 2.3	**Renewable Energy**, 20%	1
			Credit 3	**Additional Commissioning**	1
			Credit 4	**Ozone Depletion**	1
			Credit 5	**Measurement & Verification**	1
			Credit 6	**Green Power**	1

Materials & Resources — Possible Points 13

Y	?	N			
Y			Prereq 1	**Storage & Collection of Recyclables**	
			Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
			Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
			Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
			Credit 2.1	**Construction Waste Management**, Divert 50%	1
			Credit 2.2	**Construction Waste Management**, Divert 75%	1
			Credit 3.1	**Resource Reuse**, Specify 5%	1
			Credit 3.2	**Resource Reuse**, Specify 10%	1
			Credit 4.1	**Recycled Content**, Specify 25%	1
			Credit 4.2	**Recycled Content**, Specify 50%	1
			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
			Credit 6	**Rapidly Renewable Materials**	1
			Credit 7	**Certified Wood**	1

Indoor Environmental Quality — Possible Points 15

Y	?	N			
Y			Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
			Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
			Credit 2	**Increase Ventilation Effectiveness**	1
			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
			Credit 4.2	**Low-Emitting Materials**, Paints	1
			Credit 4.3	**Low-Emitting Materials**, Carpet	1
			Credit 4.4	**Low-Emitting Materials**, Composite Wood	1
			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
			Credit 6.1	**Controllability of Systems**, Perimeter	1
			Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
			Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
			Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
			Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
			Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

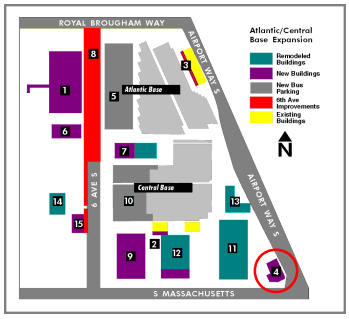
Innovation & Design Process — Possible Points 5

Y	?	N			
			Credit 1.1	**Innovation in Design**: Specific Title	1
			Credit 1.2	**Innovation in Design**: Specific Title	1
			Credit 1.3	**Innovation in Design**: Specific Title	1
			Credit 1.4	**Innovation in Design**: Specific Title	1
			Credit 2	**LEED™ Accredited Professional**	1

Project Type 1: Office/Industrial Projects

Project 1: Atlantic/Central Base Tire & Millwright Shop

Figure 2.1: Atlantic/Central Base Site Map



Project Description

The Tire and Millwright Shop is being built as part of the Atlantic/Central Base Expansion Project. The Atlantic/Central Base is located between 6th Avenue South and Airport Way South, between South Royal Brougham Way and South Massachusetts Street in Seattle. The approximately 9,800 square foot building will be steel frame construction, with precast concrete walls at the 8' base and metal siding above. The roof is primarily flat, with a small, sloped portion. The new building will house 2 bus tire service bays, tire storage, equipment repair shop space, a millwright shop and offices for the millwrights and the tire shop manager. Mechanical cooling will be provided in the offices and support spaces only. A small metal building will be demolished as part of the project.

Project LEED Assessment

This project, with both office and industrial functions, has a scope that can be addressed by the standard LEED Green Building Rating System. The project is currently in the Design Development phase, and has a well-developed LEED checklist identifying credits to be pursued by the project. The project has been registered with the USGBC for LEED Certification review. The project team for the Tire & Millwright Shop has set a goal of achieving a LEED rating of Certified, although Silver may be possible. The project is on track to achieve Certified, with 27 points in the 'Yes' category. 16 credits are currently in the 'Maybe' column. Pursing at least 7-8 of the 'Maybe' credits in Table 2.3 (the project should have at least 2 points above the minimum threshold as a buffer) could push the project into the LEED Silver category.

Project LEED Issues

The project interview did reveal some interesting points for this and other projects located at the Atlantic/Central Base (A/C Base).

1. All new construction projects that are part of the A/C Base expansion should consider taking a 'campus approach' when determining the site boundary for LEED calculation purposes. Utilizing the campus approach allows all projects to effectively share sustainable strategies, capitalizing on points attainable in the Sustainable Sites and Water

Efficiency categories. This campus approach is acceptable to the USGBC with the requirement that all projects consistently utilize the same site boundary throughout the application process. However, projects that are a part of the A/C Base who do not comply with the requirements for specific credits may harm the ability for other projects to achieve specific points. An analysis of the campus approach versus the individual project approach is recommended to understand how the projects affect each other. It may be possible to revise projects to meet the thresholds established by LEED if the analysis is completed early in 2004.

a. If the campus approach is taken, six credits may be achieved by all the A/C Base projects in the Sustainable Sites category. Bike rack and shower locations, parking and alternative fuel refueling could be distributed across the site to allow access for all occupied buildings. Design teams for the projects will need to coordinate to make sure combined efforts are adequate to meet the threshold established by LEED.

b. In the Water Efficiency category, achievement of two points is likely for approaching A/C Base projects as a campus through Water Efficient Landscaping. Three credits are moderate, pending further analysis from a campus approach perspective. Low flow fixtures alone may be sufficient to earn credits for Water Use Reduction. Develop a campus wide water use inventory to determine if the threshold is met. Dry fixtures could be added to increase water savings. The Transit Division should consider an A/C Base Project Manager's meeting to coordinate strategies and distribute resources across the site, where possible.

2. Standard asphalt and concrete paving are typical paving materials appropriate for the scope of Metro Transit Division projects. A standard concrete paving mix with no colored admixtures can use the default 0.30 reflectance in the LEED calculations for SS credit 7.1 Landscape & Exterior Design to Reduce Heat Islands. Asphalt, however, does not comply with the requirements set forth by LEED. The Transit Division should investigate alternates to asphalt that meet the requirements set forth by LEED. Furthermore, alternates to asphalt could be included in a Master Specification or guideline. One alternative may include a combination of concrete, asphalt, grass or permeable paving, and landscape shading to achieve a reduction in the heat island effect as established by the LEED Reference Guide.

3. Metal roofing is currently specified for a portion of this project. Analysis should be performed to determine alternate products that meet both Transit Division requirements and Energy Star and emissivity requirements. Once this or another County project selects appropriate light colored, high albedo roofing, the roofing information should be accessible by other County project managers for use on their projects.

4. In the 2002 report, one of the goals for this project was to incorporate daylight into workspaces for the benefit of employees. It is unclear whether the Transit Division has investigated the costs and benefits of both roll-up doors and sectional doors with lites. Consider revisiting this issue for alternates that balance maintenance issues and daylighting goals.

5. It was unclear whether operable windows are planned in the regularly occupied spaces at the Tire Shop. Due to the size and nature of the project, natural ventilation may be an appropriate design strategy, since mechanical cooling is not included in the design of the mechanical system.

6. The project plans to use low-flow plumbing fixtures to achieve Water Efficiency credit 3. Waterless urinals were identified as a strategy to pursue water use reduction, however performance and maintenance are a concern. Furthermore, waterless urinals may be inappropriate for use in uni-sex restroom facilities. The Transit Division should conduct an analysis of the pros and cons of installing waterless urinals.

7. The A/C Base may consider a 'campus approach' for an Innovation in Design credit for an Education Program. This credit is commonly awarded to projects who take advantage of the educational value of the green building features of a project by creating an actively instructional educational approach. Two of the following three elements must be included in the educational program to qualify for this credit: 1) A comprehensive signage program built into the building's spaces to educate the occupants and visitors of the benefits of green buildings. This program may include windows to view energy-saving mechanical equipment or signs to call attention to water conserving landscape features. 2) The development of a manual, guideline or case study to inform the design of other buildings based on the successes of this project. This manual will be made available to the USGBC for sharing with other projects. 3) An educational outreach program or guided tour could be

developed to focus on sustainable living, using the project as an example.

Table 2.3: Atlantic/Central Base Tire & Millwright Shop LEED Scorecard

Atlantic/Central Base Tire and Millwright Shop — **LEED™ Scorecard**

Project Manager: Ken Tarp
Phase: 60% Design Development
Covered by KCGBI [1]: Yes
Registered w/USGBC: Yes

Points Achieved/Probable (Yes column): 27
Additional / Potential Points (?/Maybe column): 16
Ratio of Achieved / Applicable: 39%

LEED™ Rating: Certified

27 | 16 | 26 — Total Project Score — Possible Points 69

Certified 27 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

6 | 4 | 4 — Sustainable Sites — Possible Points 14

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
	1		Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
	1		Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
	1		Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
	1		Credit 8	**Light Pollution Reduction**	1

2 | 3 | — Water Efficiency — Possible Points 5

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
	1		Credit 2	**Innovative Wastewater Technologies**	1
	1		Credit 3.1	**Water Use Reduction**, 20% Reduction	1
	1		Credit 3.2	**Water Use Reduction**, 30% Reduction	1

4 | 2 | 11 — Energy & Atmosphere — Possible Points 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
2			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
	1	1	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
1			Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
	1		Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

5 | 2 | 6 — Materials & Resources — Possible Points 13

Y	?	N			
Y			Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
	1		Credit 2.2	**Construction Waste Management**, Divert 75%	1
		1	Credit 3.1	**Resource Reuse**, Specify 5%	1
		1	Credit 3.2	**Resource Reuse**, Specify 10%	1
1			Credit 4.1	**Recycled Content**, Specify 25%	1
	1		Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	**Rapidly Renewable Materials**	1
1			Credit 7	**Certified Wood**	1

8 | 2 | 5 — Indoor Environmental Quality — Possible Points 15

Y	?	N			
Y			Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		1	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
	1		Credit 2	**Increase Ventilation Effectiveness**	1
1			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
1			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
	1		Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1			Credit 4.2	**Low-Emitting Materials**, Paints	1
1			Credit 4.3	**Low-Emitting Materials**, Carpet	1
1			Credit 4.4	**Low-Emitting Materials**, Composite Wood	1
1			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
1			Credit 6.1	**Controllability of Systems**, Perimeter	1
		1	Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
		1	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
		1	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
1			Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
		1	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

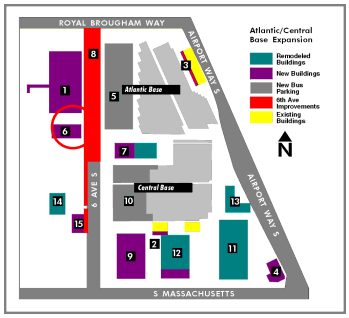
2 | 3 | — Innovation & Design Process — Possible Points 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Exemplary Performance: Non-Roof Heat Islands	1
	1		Credit 1.2	**Innovation in Design**: Education Program	1
1			Credit 1.3	**Innovation in Design**: Exemplary Construction Waste Management	1
	1		Credit 1.4	**Innovation in Design**: Exemplary Recycled Content	1
1			Credit 2	**LEED™ Accredited Professional**	1

Project 2: Communications and Control Center

Project Description

Figure 2.2: Atlantic/Central Base Site Map



The Communications and Control Center (CCC) program has changed from providing office space for four separate County units, to providing space for only one tenant, the Communications Center. The team did investigate the possibility of using an existing building. Due to the specific programmatic needs of the Communications Center, and the need to be close to the King Street Center and the Atlantic/Central Base, the team determined a new building would be more cost effective.

Located on the northwest corner of 6th Avenue South and Atlantic Street South, the CCC is a 14,000 square foot single story steel structure. Mechanical cooling is planned for this project. The CCC will act as an Emergency Operations Center, in the event of an emergency. Redundant back-up systems are designed to operate under emergency conditions, if necessary.

Project LEED Assessment

This project scope is primarily office space, making LEED Certification applicable. The project is currently at the 60% Design Development Phase, and has a well developed LEED checklist identifying LEED credits in pursuit. The project is registered with the USGBC and is pursuing a LEED Certified rating. This goal is achievable with 28 credits in the 'Yes' category and 18 credits in the 'Maybe' column of Table 2.4. Interviewing the project team revealed potential for the project to achieve a LEED Silver Rating. Allow a buffer of at least 2 points over the Silver threshold to increase the opportunity for success at the Silver level.

Project LEED Issues

1. Please see the Project LEED Issues identified under Project 1: Atlantic/Central Base Tire & Millwright Shop for issues pertaining to the campus approach generally accepted by the USGBC. This approach may earn the project points in the Sustainable Sites, Water Efficiency and Innovation in Design categories due to sharing site amenities among all A/C base projects.

Other project LEED issues were identified as follows:

2. There is a need for project teams to understand whether the King County or local municipality code is equal to or more stringent than the requirements set forth by LEED. Currently, projects are following the local jurisdictional

code, even where King County requirements are more stringent. The Transit Division should consider developing a policy whereby the most stringent standards are followed, regardless of which is required for compliance. This would improve both the environment and LEED performance.

3. Investigate issues surrounding installation of HVAC equipment free of HCFC's and Halons and make achievement of this credit a priority.

Table 2.4: Communications and Control Center LEED Scorecard

Communications and Control Center — **LEED™ Scorecard**

Project Manager: Don Campbell
Phase: 60% Design Development
Covered by KCGBI [1]: Yes
Registered w/USGBC: Yes

Points Achieved/Probable (Yes column): 28
Additional / Potential Points (?/Maybe column): 18
Ratio of Achieved / Applicable: 41%

LEED™ Rating: Certified

28 | 18 | 23 — Total Project Score — Possible Points: 69

Certified 27 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

6 | 4 | 4 — Sustainable Sites — Possible Points: 14

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
	1		Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
	1		Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
	1		Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
	1		Credit 8	**Light Pollution Reduction**	1

2 | 3 — Water Efficiency — Possible Points: 5

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
	1		Credit 2	**Innovative Wastewater Technologies**	1
	1		Credit 3.1	**Water Use Reduction**, 20% Reduction	1
	1		Credit 3.2	**Water Use Reduction**, 30% Reduction	1

3 | 3 | 11 — Energy & Atmosphere — Possible Points: 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
2			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
	1	1	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
1			Credit 3	**Additional Commissioning**	1
	1		Credit 4	**Ozone Depletion**	1
	1		Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

5 | 2 | 6 — Materials & Resources — Possible Points: 13

Y	?	N			
Y			Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
	1		Credit 2.2	**Construction Waste Management**, Divert 75%	1
		1	Credit 3.1	**Resource Reuse**, Specify 5%	1
		1	Credit 3.2	**Resource Reuse**, Specify 10%	1
1			Credit 4.1	**Recycled Content**, Specify 25%	1
	1		Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	**Rapidly Renewable Materials**	1
1			Credit 7	**Certified Wood**	1

10 | 3 | 2 — Indoor Environmental Quality — Possible Points: 15

Y	?	N			
Y			Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		1	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
	1		Credit 2	**Increase Ventilation Effectiveness**	1
1			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
1			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
	1		Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1			Credit 4.2	**Low-Emitting Materials**, Paints	1
1			Credit 4.3	**Low-Emitting Materials**, Carpet	1
1			Credit 4.4	**Low-Emitting Materials**, Composite Wood	1
1			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
1			Credit 6.1	**Controllability of Systems**, Perimeter	1
		1	Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
1			Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
1			Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
	1		Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
1			Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

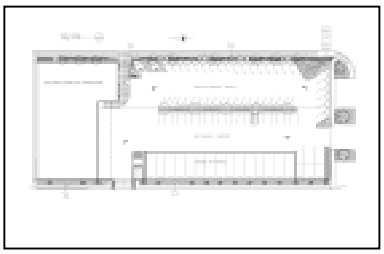
2 | 3 — Innovation & Design Process — Possible Points: 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Exemplary Performance: Non-Roof Heat Islands	1
	1		Credit 1.2	**Innovation in Design**: Education Program	1
1			Credit 1.3	**Innovation in Design**: Exemplary Construction Waste Management	1
	1		Credit 1.4	**Innovation in Design**: Exemplary Recycled Content	1
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 3: Power Distribution Headquarters

Figure 2.3: **Power Distribution Headquarters**



Project Description

The Power Distribution Headquarters, at Fourth Avenue South and Stacy Street, is a 26,000 square foot project that will house offices and maintenance shop space. Employee parking and covered stalls for non-revenue vehicles will also be located on site.

The project will use xeriscaping principles, such as selection of native and drought tolerant vegetation, to avoid the need for irrigation at planted areas. Skylights and clerestory windows will provide daylighting in the shop spaces. The mechanical system has been zoned to allow flexible and efficient use of the different spaces. High efficiency boiler and water heaters are specified. Temperature controls are provided at every office.

Project LEED Assessment

The project was out of the Predesign phase prior to the County adopting the GBI. However, the project team held a half-day charrette to discuss green design options and set goals, and was pursuing a LEED Equivalent rating. Based on a later LEED meeting with Paladino, it was determined that the project scope could be addressed by the standard LEED Green Building Rating system. Upon review of the credits being pursued by the team, the project was close to achieving a LEED rating of Certified. The King County Project Manager decided to pursue a LEED Certified rating and has registered the project with the USGBC. As the project approaches construction, it is critical for the contractor to commit to achieving the LEED items called out in the specification and construction drawing set.

Project LEED Issues

As one of the first Transit Division projects slated for construction as a LEED rated building, the information gleaned from this project will be valuable for future projects bound by the GBI pursuing a LEED rating. Information from this project may be used to create a standard specification for the Transit Division and King County. The project is currently at the early stages of construction. The project is registered with the USGBC and is pursuing a LEED Certified rating. This goal is achievable with 29 credits in the 'Yes' category and 3 credits in the 'Maybe' column of Table 2.5.

1. The project has planned contractor LEED training. Although the demolition contractor has experience with LEED, the

general contractor does not. The general contractor is hiring a staff person with LEED experience to do LEED documentation. This is beneficial to the project since the contractor submittals required by LEED are critical to the successful completion of many of the credits.

2. The team recognized a need to incorporate sustainable design and LEED requirements into future Requests For Qualifications. King County will need to consider sustainable design expertise, both internal and external, when it assembles project teams.

3. Penalty and/or incentive clauses were identified as a potential strategy to ensure that contractors on Transit Division projects meet LEED requirements. Penalties and/or incentives should be built into the Terms & Conditions of their contract documents on a point-by-point basis, for credits under control of the contractor.

   This issue, however, is extremely complex for a number of reasons.

   a. It is difficult to create penalty clauses that are sufficiently stringent, and yet fair to the contractor. It can potentially set up an adversarial situation within the client-contractor relationship. Penalties, if too small, may be considered insignificant relative to the perceived (or real) cost to follow the requirements set forth by LEED. If too high, penalties may cause the contractor to overly inflate the bid.

   b. Penalty and/or incentive clauses do offer some protection from non-achievement of LEED points due to contractor non-compliance. This may be addressed by adding LEED compliance in the general conditions or contract section dealing w/non-performance.

   c. The insurance values of LEED credits are not yet determined; there is currently no clear guidance on the dollar value associated with LEED non-performance.

Table 2.5: Power Distribution Headquarters LEED Scorecard

Power Distribution Headquarters — **LEED™ Scorecard**

Project Manager: Ron Moattar
Phase: Construction
Covered by KCGBI [1]: No (but opted yes)
Registered w/USGBC: Yes

Points Achieved/Probable (Yes column): 29
Additional / Potential Points (?/Maybe column): 3
Ratio of Achieved / Applicable: 42%

LEED™ Rating Certified

Y	?	N			
29	3	37	**Total Project Score**	Possible Points	69

Certified 27 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

Y	?	N			
4		10	**Sustainable Sites**	Possible Points	14
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
		1	Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
		1	Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		1	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
		1	Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
		1	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
		1	Credit 8	**Light Pollution Reduction**	1

Y	?	N			
4		1	**Water Efficiency**	Possible Points	5
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
1			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
1			Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Y	?	N			
5	2	10	**Energy & Atmosphere**	Possible Points	17
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
2			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
2			Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
	2		Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
1			Credit 3	**Additional Commissioning**	1
		1	Credit 4	**Ozone Depletion**	1
		1	Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Y	?	N			
6		7	**Materials & Resources**	Possible Points	13
Y			Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		1	Credit 3.1	**Resource Reuse**, Specify 5%	1
		1	Credit 3.2	**Resource Reuse**, Specify 10%	1
1			Credit 4.1	**Recycled Content**, Specify 25%	1
1			Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	**Rapidly Renewable Materials**	1
		1	Credit 7	**Certified Wood**	1

Y	?	N			
8		7	**Indoor Environmental Quality**	Possible Points	15
Y			Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		1	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
		1	Credit 2	**Increase Ventilation Effectiveness**	1
1			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
1			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
1			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1			Credit 4.2	**Low-Emitting Materials**, Paints	1
1			Credit 4.3	**Low-Emitting Materials**, Carpet	1
1			Credit 4.4	**Low-Emitting Materials**, Composite Wood	1
1			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
		1	Credit 6.1	**Controllability of Systems**, Perimeter	1
1			Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
		1	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
		1	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
		1	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
		1	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

Y	?	N			
2	1	2	**Innovation & Design Process**	Possible Points	5
1			Credit 1.1	**Innovation in Design**: Exemplary Performance: Heat Island Reductn	1
		1	Credit 1.2	**Innovation in Design**: Exemplary Performance: Water Efficiency	1
	1		Credit 1.3	**Innovation in Design**: Exemplary Construction Waste Management	1
		1	Credit 1.4	**Innovation in Design**: Specific Title	1
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 4: Metro North Facilities

Project Description

The Transit Division currently operates a maintenance facility located at North Lake Union. The Transit Division was approached by a private developer proposing a trade for the upper parcel of the North Lake Union site, in exchange for a new site and new maintenance facilities for Metro.

Figure 2.4: North Lake Union Site

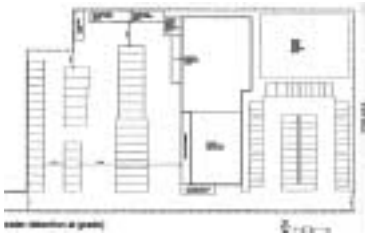
The developer is proposing a mixed-use Transit Oriented Development for the upper parcel of the current North Lake Union Metro Facilities site. The TOD may consist of a mixed-use site, combining bus/train station, parking garage, retail, office and housing units.

The contract for the North Lake Union development is currently under negotiation.

In exchange for being granted the parcel, the developer will rebuild the existing Metro facilities on a new site, in collaboration with Design and Construction and the Power Facilities Sections of the Metro Transit Division.

The Transit Division identified four sites for evaluation, and one site was chosen. Criteria for selection included the total available area of the site, and proximity to the service area. The proposed Metro North Facilities site is located on Aurora Avenue North and will provide offices, shop and storage areas, parking, equipment storage, crew areas and outdoor support spaces.

Figure 2.5: Metro North Facilities



The contract for the Metro North Facilities was under negotiation at the time of the interview, however, basic site programmatic requirements have been addressed.

Project LEED Assessment

At the new facilities, the project scope is office/industrial, a building type in which LEED Certification applies. The program requires 73,000 square feet of exterior space for outdoor support and parking. An additional 23,000 square feet of office and enclosed space is required. The project is in the Planning and Predesign Phase. Due to the preliminary stage of development of this project, a LEED assessment is not available at this time. However, the project manager plans to incorporate LEED principles in the project. It is possible for the project to achieve LEED Certified or higher.

Project LEED Issues

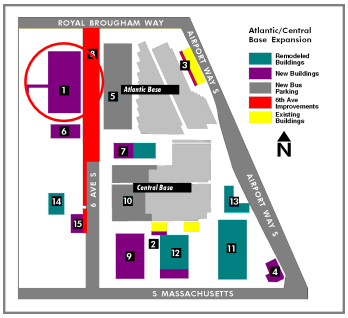
1. The Transit Division should also pursue a LEED Rating on the new Metro North Facilities site as a part of the contract with the developer. This establishes a clear expectation and framework for the developer and will increase the opportunities to qualify for a LEED Rating. The developer cannot be held solely responsible for complying with the GBI.
2. The Transit Division should work with the Green Team to assist and encourage private developers to adopt and incorporate LEED for the both projects. Tools such as eco-charrettes, project team training or sustainable design consultation may be funded by the Green Team or should be planned for in project budgets and team selection.

Project Type 2: Parking Facilities

This project type includes park and ride, interim parking, employee parking and bus parking facilities.

Project 5: Atlantic/Central Base Employee Parking Garage

Figure 2.6: Atlantic/Central Base Site Map



Project Description

The new Employee Parking Garage will provide 1000 stalls of employee and County vehicle parking for the Atlantic/Central Base. Currently under construction, the project includes a small control booth on the ground floor and landscaping strips around the building. Concrete waste from the construction demolition was used in place of new material for structural fill for the garage (refer to the A/C Base Expansion Demolition, Project 12 in this report).

Project LEED Assessment

Garages are not specifically addressed by the LEED Rating System. Many credits do not apply to parking garages and parking lots, such as the Indoor Environmental Quality category credits. These credits have been listed as Not Applicable (NA) in the table below and removed from the denominator, or total possible points. Even though the scope of the project precludes a LEED rating, many LEED principles are still applicable.

Although the project was started prior to adoption of the GBI, the project decided to incorporate applicable green strategies. The team created a LEED credit checklist to set priorities and identify credits that were not applicable to a garage or not feasible due to cost. The team has incorporated many LEED features into the project. Based on an adjusted point total, removing non-applicable points, the project is pursuing an Equivalent LEED Rating of Certified. The goal is achievable with 22 credits in the 'Yes' category, and 9 credits in the 'Maybe' category, as calculated Table 2.6.

Project LEED Issues

Please see the Project LEED Issues identified under Project 1: Atlantic/Central Base Tire & Millwright Shop for issues pertaining to the campus approach generally accepted by the USGBC. This approach will earn the project points in the Sustainable Sites and Water Efficiency categories. Other project LEED issues were identified as follows:

1. There is a conflict between installing low-water plants to minimize irrigation needs and meeting City of Seattle Street

Tree requirements. The County may wish to pursue negotiation with the City to adjust their standards to work with LEED strategies. There has been no update on this issue since the 2002 report.

2. An external lighting consultant was hired to develop the lighting specifications and ensure lighting complies with the site lighting credit SS credit 8 Light Pollution Reduction. Furthermore, energy efficient lighting was specified. King County may consider creating a master-parking garage lighting specification or guidelines based on the garage lighting requirements established by this project.

3. 32 electric-vehicle recharging stations are provided on site. The Transit Division may consider monitoring the use of these stalls to determine effectiveness of this number and type of alternative fuel refueling. The 32 alternative fuel refueling stations may be applied toward achievement of SS credit 4.3 for all A/C Base projects under a campus approach in the LEED application.

4. The Project Manager has set an example for the Transit Division by becoming a LEED Accredited Professional. This increased knowledge will facilitate incorporation of LEED on future projects. In addition, having a LEED AP on the project earns one point for ID credit 2 – LEED Accredited Professional.

5. Since the nature of the project contributes to increased usage of alternative transportation, the park and ride projects by nature meet the intent of the Alternative Transportation credits, reduce pollution and land development impacts associated with automobile use.

Table 2.6: Atlantic/Central Base Employee Parking Garage LEED Scorecard

Atlantic/Central Base Employee Parking Garage — **LEED™ Scorecard**

Project Manager: Mike Stanaszek
Phase: Construction
Covered by KCGBI [1]: No (but opted yes)
Registered w/USGBC: n/a

Points Achieved/Probable (Yes column): 22
Additional / Potential Points (?/Maybe column): 9
Ratio of Achieved / Applicable: 41%

Equivalent LEED™ Rating: Certified

Y	?	N	Total Project Score	Possible Points
22	9	23		54

Certified 21 to 25 points Silver 26 to 30 points Gold 31 to 40 points Platinum 41 or more points

Y	?	N	Sustainable Sites	Possible Points: 14	
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
	1		Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
	1		Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		1	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
1			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
1			Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
		1	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
1			Credit 8	**Light Pollution Reduction**	1

Y	?	N	Water Efficiency	Possible Points: 5	
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
	1		Credit 3.1	**Water Use Reduction**, 20% Reduction	1
	1		Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Y	?	N	Energy & Atmosphere	Possible Points: 17	
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
T			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
2			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
2			Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
	1		Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
	1		Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
		1	Credit 5	**Measurement & Verification**	1
	1		Credit 6	**Green Power**	1

Y	?	N	Materials & Resources	Possible Points: 13	
Y			Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		1	Credit 3.1	**Resource Reuse**, Specify 5%	1
		1	Credit 3.2	**Resource Reuse**, Specify 10%	1
1			Credit 4.1	**Recycled Content**, Specify 25%	1
	1		Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
		1	Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	**Rapidly Renewable Materials**	1
		1	Credit 7	**Certified Wood**	1

Y	?	N	Indoor Environmental Quality	Possible Points: 0	
		NA	Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	
		NA	Credit 4.2	**Low-Emitting Materials**, Paints	
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**	
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

Y	?	N	Innovation & Design Process	Possible Points: 5	
1			Credit 1.1	**Innovation in Design**: Exemplary Performance in CWM	1
	1		Credit 1.2	**Innovation in Design**: Exemplary Performance in Alt Fuel Vehicles	1
		1	Credit 1.3	**Innovation in Design**: Education Program	1
1			Credit 1.4	**Innovation in Design**: Alt Trans: Enable Mass Transit	1
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 6: Eastgate Park & Ride / Interim Lot

Figure 2.7: Eastgate Park & Ride Site Plan

Project Description

The Eastgate Park & Ride Lot will add 932 spaces to the existing facility, for a total of 1,656 parking spaces. The project includes a new five-story parking garage, bus shelter and loading area, and landscaping. One restroom is provided on site for transit operators, in the driver comfort station. Electric heat and lighting are regulated by a motion sensor to provide warmth and light only when it is required. At the time of the interview, the project was under construction.

A temporary, interim park & ride lot was built to provide replacement parking during construction at the permanent Park & Ride lot. This interim lot accommodates a total of 500 parking spaces. Concrete bulkheads and foundation were found at the site of the temporary lot. Where possible, concrete was crushed on-site and used as backfill for the new parking lot. An estimated 15-20 cubic yards of crushed concrete were re-used on site. Larger concrete pieces not used at the site were salvaged for use off site, instead of dumped at the landfill.

Project LEED Assessment

The project was designed prior to the adoption of the GBI, yet some LEED principles were applied. A number of credits are achieved due to jurisdictional requirements; for example Water Efficiency credit 1.1 is achieved since the project will use high efficiency irrigation as required by the City of Bellevue. The Site Stormwater Management credits will also be achieved since the project is required to meet King County Stormwater regulations, which meet or exceed LEED requirements. Other LEED principles incorporated at the project include using a light colored concrete paving material and energy efficient lighting. Using high volume fly-ash in the concrete mix as a replacement for cement, along with steel construction will qualify the project for at least one of the recycled content materials credits. Three electric vehicle charging stations will also be provided. While that number does not earn a LEED point (51 spaces would be required), it is a good demonstration and test to determine demand for such amenities.

The project may be able to achieve 14-23 points, or up to 30% of applicable points, as detailed in Table 2.7. The project is on track for a LEED Equivalent Rating of Certified.

Project LEED Issues

1. The project is on track to achieve MR credit 2.1 and MR credit 2.2 Construction Waste Management by diverting at least 75% of construction waste from the landfill.
2. As identified for this project, as well as the other garages, there is a conflict between safety concerns and lighting levels required under Sustainable Site credit 7 - Light Pollution Reduction. It is not clear how the City of Bellevue lighting standards compare to the requirements set forth by LEED. The Transit Division should consider creating a standard specification or guideline that meet the criteria set forth by IESNA while maintaining acceptable security lighting levels.
3. Motion sensors will be installed in the driver comfort station to provide heat and light only when required. One uni-sex bathroom will be provided. Refer to the discussion regarding water use reduction under Project 1 of this report.
4. The Transit Division may consider using the 1% for Art to highlight sustainable features in the building. Please see the comments for Innovation in Design Credit for an Education Program as listed under Project 1.

Table 2.7: Eastgate Park & Ride / Interim Lot LEED Scorecard

Eastgate Park & Ride / Interim Lot — **LEED™ Scorecard**

Project Manager: Sheldon Teel
Phase: Construction
Covered by KCGBI [1]: No (but opted yes)
Registered w/USGBC: n/a

Points Achieved/Probable (Yes column): 14
Additional / Potential Points (?/Maybe column): 9
Ratio of Achieved / Applicable: 30%

Equivalent LEED™ Rating: Not Certified (Certification Equivalent Possible)

14 | 9 | 24 Total Project Score — Possible Points 47

Certified 18 to 22 points Silver 23 to 26 points Gold 27 to 35 points Platinum 35 or more points

Sustainable Sites — Possible Points 11

Y	?	N			
Y			Prereq 1	**Erosion & Sediment Control**	
1			Credit 1	**Site Selection**	1
	1		Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
		NA	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	
		1	Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
		NA	Credit 4.4	**Alternative Transportation**, Parking Capacity	
	1		Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
	1		Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
1			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
1			Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
		NA	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	
	1		Credit 8	**Light Pollution Reduction**	1

Water Efficiency — Possible Points 5

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
		1	Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
	1		Credit 3.1	**Water Use Reduction**, 20% Reduction	1
		1	Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Energy & Atmosphere — Possible Points 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
1		1	Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
		2	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
	1		Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
		1	Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Materials & Resources — Possible Points 9

Y	?	N			
	NA		Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
1			Credit 4.1	**Recycled Content**, Specify 25%	1
		1	Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
		1	Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Indoor Environmental Quality — Possible Points 0

Y	?	N			
		NA	Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	
		NA	Credit 4.2	**Low-Emitting Materials**, Paints	
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**	
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

Innovation & Design Process — Possible Points 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Exemplary Construction Waste Management	1
	1		Credit 1.2	**Innovation in Design**: Asphalt demo and re-use	1
1			Credit 1.3	**Innovation in Design**: Alt Trans - Enable Mass Transit thru P&R Lot	1
	1		Credit 1.4	**Innovation in Design**: Educational Program / 1 % for Art	1
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 7: Redondo Heights Park & Ride Lot

Project Description

The Redondo Heights Park & Ride Lot is located near the intersection of Pacific Highway South and 276th Street. The ten acre site will have 700 parking stalls, a bus shelter area and a driver comfort station with one restroom. A public art component on the transit platform area could provide an educational opportunity to promote sustainability. At the time of the interview, the project was under construction.

Project LEED Assessment

The project was started prior to implementation of the initiative, so was not required to abide by the initiative. However the project, as is, was assessed using LEED. Since it is a parking facility, the assessment uses the Equivalent LEED Rating structure.

The site was previously a junkyard and is regulated by the state of Washington as a contaminated site. If contamination and remediation includes containment, and can be documented, the project could achieve the Brownfield credit, Sustainable Sites credit 3. Similar to the other park and ride facilities, xeriscaping will be used at landscaped areas. Energy efficient lighting, construction waste recycling, and recycled content and local materials are also planned as LEED elements.

The project scorecard in Table 2.8 demonstrates that the project is pursuing 17 of the 46 applicable points, or 35% of applicable points. Above this, there are eight points that are attainable with a reasonable amount of work. Achieving just one of these eight points would allow the project to reach an Equivalent LEED Rating of Certified.

Project LEED Issues

1. Due to the density of proposed construction neighboring the project, credit for SS credit 2 - Urban Redevelopment may be achieved. Perform the calculations described by the LEED Reference Guide to demonstrate achievement of this credit.
2. Standard asphalt and concrete paving are typical paving materials appropriate for the scope of Metro Transit Division projects. A standard concrete paving mix with no colored admixtures can use the default 0.30 reflectance in the LEED calculations for SS credit 7.1 Landscape & Exterior Design to Reduce Heat Islands. Asphalt, however, does not comply with the requirements set forth by LEED. The Transit

Division should investigate alternates to asphalt that meet the requirements set forth by LEED. Furthermore, alternates to asphalt could be included in a Master Specification or guideline. One alternative may include a combination of concrete, asphalt, grass or permeable paving, and landscape shading to achieve a reduction in the heat island effect as established by the LEED Reference Guide.

3. Since light fixtures, landscape materials, and other specification items are similar among all County parking facilities, tracking strategies, materials etc. used at these early projects could form the basis of a standard County specifications for green parking facilities.

4. Since the nature of the project contributes to increased usage of alternative transportation, the park and ride projects by nature meet the intent of the Alternative Transportation credits, reduce pollution and land development impacts associated with automobile use.

Table 2.8: Redondo Heights Park & Ride LEED Scorecard

Redondo Heights Park & Ride — LEED™ Scorecard

Project Manager: Sheldon Teel
Phase: Construction
Covered by KCGBI [1]: No (but opted yes)
Registered w/USGBC: n/a

Points Achieved/Probable (Yes column): 17
Additional / Potential Points (?/Maybe column): 8
Ratio of Achieved / Applicable: 36%

Equivalent LEED™ Rating: Not Certified (Certification Equivalent Possible)

Y	?	N	Total Project Score	Possible Points
17	8	22		47

Certified 18 to 22 points Silver 23 to 26 points Gold 27 to 35 points Platinum 35 or more points

Sustainable Sites — Possible Points 11

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
	1		Credit 2	**Urban Redevelopment**	1
	1		Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
		NA	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	
		1	Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
		NA	Credit 4.4	**Alternative Transportation**, Parking Capacity	
1			Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
	1		Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
1			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
1			Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
		NA	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	
		1	Credit 8	**Light Pollution Reduction**	1

Water Efficiency — Possible Points 5

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
1			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
		1	Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Energy & Atmosphere — Possible Points 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
	1	1	Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
		2	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
		1	Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
	1		Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Materials & Resources — Possible Points 9

Y	?	N			
	NA		Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
1			Credit 4.1	**Recycled Content**, Specify 25%	1
		1	Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Indoor Environmental Quality — Possible Points 0

Y	?	N			
		NA	Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	
		NA	Credit 4.2	**Low-Emitting Materials**, Paints	
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**	
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

Innovation & Design Process — Possible Points 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Level 3 SW Treatment, Exemplary Perf SS 6.2	1
1			Credit 1.2	**Innovation in Design**: Alt Trans - Enable Mass Transit thru P&R Lot	1
	1		Credit 1.3	**Innovation in Design**: Exemplary Construction Waste Management	1
	1		Credit 1.4	**Innovation in Design**: Educational Program / 1% for Art	1
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 8: Issaquah Highlands Park & Ride/Interim Lot

Project Description

The Issaquah Highlands Park & Ride consists of a five-level, 1,034- stall parking garage. The project is located adjacent to a 3,200 residential unit development, and will provide lease options for private retail development on the south side. The four acre property is located at the site of a former quarry in Issaquah, near the Port Blakely development and the I-90 Sunset Interchange. One quarter of the site will be covered with landscaping as part of an urban village masterplan. The project is subject to Port Blakely design guidelines and the City of Issaquah zoning and building code.

Project LEED Assessment

Currently at 90% Design Development, the Green Building Initiative covers this project. However, garages are not specifically addressed by the LEED Rating System. The credits that do not apply to parking garages and lots have been listed in the LEED Scorecard as Not Applicable (NA) and removed from the total number of possible points.

Although not applicable to a LEED Rating by the USGBC, the team has incorporated a number of green strategies for the project in support of the GBI, listed in Table 2.9. This project is headed towards an Equivalent Certification level (43%), with 28 of 47 applicable 'Yes' points and 7 'Maybe' points on track for the design phase.

Project LEED Issues

1. Port Blakely has a policy requiring tenant guidelines to be included in the lease that require tenants to meet the LEED for New Construction and/or LEED for Commercial Interiors (LEED CI) requirements associated with building projects and interior tenant improvement. The adjacent retail project would likely have a scope that is addressed by the standard LEED Rating System and/or LEED CI. This would be required for the development adjacent to the garage.
2. In order to facilitate the tracking of benefits, such as energy and water savings, consider sub-metering. This is particularly useful where multiple parties are involved, such as the retail component or Port Blakely Communities. In general, the Division should consider tracking costs and benefits associated with incorporating LEED strategies in their LEED and other building projects.

3. The project team currently plans on achieving WE credit 1.1 and WE credit 1.2 Water Efficient Landscaping through using native, drought tolerant plants and not providing a permanent landscape irrigation system. However, it is unclear how the long the system used to establish the landscaping would be in place. Consider a temporary irrigation system to comply with the requirements of these credits, such as temporary soaker hoses.

4. Fly ash is being used in the concrete mix for the parking structure. The Transit Division should consider tracking the fly-ash replacement ratios from project to project to evaluate the success of high volume fly-ash mixtures for inclusion in a Master Specification.

5. Creative strategies have been employed to prevent headlight glare from leaving the parking garage. Perforated metal panels double as both art features and light pollution prevention by cutting-off light pollution at the source. Furthermore, the efforts of the design team to minimize headlight trespass from the cars in the garage can act as the basis for a County garage Master Specification or guideline.

6. A public art component on the transit platform area could provide an educational opportunity to promote sustainabily. Paired with a case study publication in print or on the Internet, the project could qualify for an Innovation in Design credit.

Table 2.9: Issaquah Highlands Park & Ride/Interim Lot LEED Scorecard

Issaquah Highlands Park & Ride / Interim Lot — **LEED™ Scorecard**

Project Manager: Sheldon Teel
Phase: 90% design
Covered by KCGBI [1]: Yes
Registered w/USGBC: n/a

Points Achieved/Probable (Yes column): 20
Additional / Potential Points (?/Maybe column): 7
Ratio of Achieved / Applicable: 43%

Equivalent LEED™ Rating: Certified

Y	?	N	**Total Project Score**	Possible Points
20	7	20		47

Certified 18 to 22 points Silver 23 to 26 points Gold 27 to 35 points Platinum 35 or more points

Y	?	N	Sustainable Sites	Possible Points	11
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
	1		Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
		NA	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	
		1	Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
		NA	Credit 4.4	**Alternative Transportation**, Parking Capacity	
	1		Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
1			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
1			Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
		NA	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	
1			Credit 8	**Light Pollution Reduction**	1

Y	?	N	Water Efficiency	Possible Points	5
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
	1		Credit 3.1	**Water Use Reduction**, 20% Reduction	1
		1	Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Y	?	N	Energy & Atmosphere	Possible Points	17
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
T			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
2			Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
		2	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
1			Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
1			Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Y	?	N	Materials & Resources	Possible Points	9
	NA		Prereq 1	**Storage & Collection of Recyclables**	
		1	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
1			Credit 4.1	**Recycled Content**, Specify 25%	1
	1		Credit 4.2	**Recycled Content**, Specify 50%	1
	1		Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Y	?	N	Indoor Environmental Quality	Possible Points	0
		NA	Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	
		NA	Credit 4.2	**Low-Emitting Materials**, Paints	
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**	
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

Y	?	N	Innovation & Design Process	Possible Points	5
1			Credit 1.1	**Innovation in Design**: Urban Village Master Plan, TOD Component	1
	1		Credit 1.2	**Innovation in Design**: Educational Program / 1% for Art	1
1			Credit 1.3	**Innovation in Design**: Alt Trans - Enable Mass Transit thru P&R Lot	1
	1		Credit 1.4	**Innovation in Design**: Exemplary Construction Waste Management	1
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 9: Burien Transit Center

Project Description

Figure 2.8: Burien Transit Center Site Map

The Burien Transit Center is located between SW 148th and SW 150th Street and 4th Avenue SW in the heart of the Burien Town Square Mixed-Use Redevelopment. Currently a Park & Ride lot, new amenities will be added with the goal of creating a pedestrian friendly transit center, eventually becoming a mixed use Transit Oriented Development (TOD). The 4.3-acre site will have 400 parking stalls, two driver comfort stations, bus shelter and loading areas, and bus layover spaces. Leaning rails and benches will be provided. A small satelite office, public restrooms and vendor space are being considered at the site. 4000 transit riders will use this tranfer center daily.

Project LEED Assessment

Currently in Predesign, the Green Building Initiative covers this project. The eventual goal for the site is to include a mixed-use TOD and parking structure. If this becomes reality, the TOD could apply for LEED certification. However the transit center, as is, was assessed using the Equivalent LEED Rating method.

Similar to the other park and ride facilities, xeriscaping will be used at landscaped areas. Water from power washing sidewalks can be used to supplement landscape irrigation needs. Energy-efficient lighting, construction waste recycling, and recycled content and local materials are also planned as LEED elements.

At this early stage, this project is just below the level of equivalent certification (36%), with 19 of 50 applicable points. Above this, there are 13 points that are attainable with a reasonable amount of effort. Achieving just 1 of these 13 points will allow the project to reach an Equivalent LEED Rating of Certified, or 38%. Refer to the detailed LEED scorecard in Table 2.10.

Project LEED Issues

1. Due to the large amount of paving required for buses, concrete is a good option for reflectivity and strength. In the areas paved with asphalt (such as areas primarily designed for passenger vehicles), shading provided by tree canopy may be specified to reduce the urban heat island effect. Both asphalt and concrete, which may be used as a short term paving, can be broken up and reused as structural fill in future development, either on or off-site. For short-term parking, gravel could be considered, and may also be reused on-site at the end of its life as a parking surface.

2. Similar to other projects, there are many issues associated with providing recycling containers. Recycling is a fundamental, required strategy within the LEED rating system and more study of the issue is recommended.
3. Since light fixtures, landscape materials, construction waste management, water fixtures, recycled content materials and other specifications items are similar among all County parking facilities, tracking strategies, materials etc. used at these early projects could form the basis of a standard County specifications for green parking facilities.
4. Since the nature of the project contributes to increased usage of alternative transportation, the park and ride projects by nature meet the intent of the Alternative Transportation credits, reduce pollution and land development impacts associated with automobile use.

Table 2.10: Burien Transit Center LEED Scorecard

Burien Transit Center — **LEED™ Scorecard**

Project Manager:	Elizabeth Morgan	**Points Achieved/Probable (Yes column):**	19
Phase:	Pre-design	**Additional / Potential Points (?/Maybe column):**	13
Covered by KCGBI [1]:	Yes	**Ratio of Achieved / Applicable:**	38%
Registered w/USGBC:	n/a	**Equivalent LEED™ Rating**	Certified

19 | 13 | 18 — Total Project Score — Possible Points **50**

Certified 19 to 24 points Silver 24 to 28 points Gold 28 to 37 points Platinum 38 or more points

Sustainable Sites — Possible Points 14

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
	1		Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
	1		Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
	1		Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		1	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
1			Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
1			Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
	1		Credit 8	**Light Pollution Reduction**	1

Water Efficiency — Possible Points 5

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
1			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
1			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
	1		Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Energy & Atmosphere — Possible Points 17

Y	?	N			
Y			Prereq 1	**Fundamental Building Systems Commissioning**	
Y			Prereq 2	**Minimum Energy Performance**	
T			Prereq 3	**CFC Reduction in HVAC&R Equipment**	
1	1		Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	2
		2	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	2
		2	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	2
		2	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	2
		2	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	2
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
		1	Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
	1		Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Materials & Resources — Possible Points 6

Y	?	N			
	NA		Prereq 1	**Storage & Collection of Recyclables**	
		NA	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	
		NA	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	
		NA	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
1			Credit 4.1	**Recycled Content**, Specify 25%	1
	1		Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Indoor Environmental Quality — Possible Points 3

Y	?	N			
NA			Prereq 1	**Minimum IAQ Performance**	
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
1			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1			Credit 4.2	**Low-Emitting Materials**, Paints	1
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
	1		Credit 5	**Indoor Chemical & Pollutant Source Control**	1
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

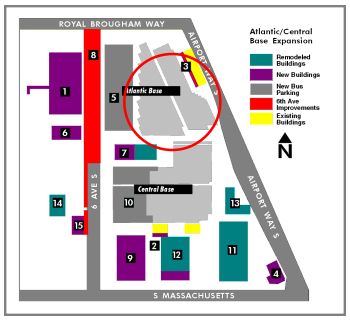
Innovation & Design Process — Possible Points 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Exemplary Performance: Heat Island Reductn	1
	1		Credit 1.2	**Innovation in Design**: Exemplary Performance: CWM	1
	1		Credit 1.3	**Innovation in Design**: Education Program	1
1			Credit 1.4	**Innovation in Design**: Alt Trans - Enable Mass Transit thru P&R Lot	1
	1		Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project 10: Atlantic/Central Base North Yard

Figure 2.9: Atlantic/Central Base Site Map



Project Description

The Atlantic/Central Base Expansion will allow King County Transit to house a total of more than 500 buses. The North Yard will serve as parking storage for 100 buses, and will not be regularly occupied. The opportunity for landscaping strips is limited. Asphalt waste from the demolition of the existing street being reconstructed at 6th Avenue South is being considered for use as structural fill underneath the parking surface.

Project LEED Assessment

Bus yards are not specifically addressed by the LEED Rating System. Many credits do not apply to parking areas, such as credits under the Energy & Atmosphere and Indoor Environmental Quality categories. These credits have been listed as Not Applicable (NA) in the table below and removed from the denominator, or total possible points. Even though the scope of the project precludes a LEED rating, many LEED principles are still applicable.

The A/C Base Yard project is currently in the design phase, and is covered by the GBI. The team has incorporated as many LEED features into the project as possible. Based on the scorecard in the following Table 2.11, an adjusted point total qualifies the project for pursuit of 44% of the remaining points, or an Equivalent LEED Rating of Certified. 12 points are in the 'Yes' column and 8 points are listed in the 'Maybe' column. Achieving just one additional credit would result in an Equivalent LEED Rating of Silver.

Project LEED Issues

Please see the Project LEED Issues identified under Project 1: Atlantic/Central Base Tire & Millwright Shop for issues pertaining to the campus approach generally accepted by the USGBC. This approach will earn the project points in the Sustainable Sites and Water Efficiency categories. Other project LEED issues were identified as follows:

1. There is a conflict between installing low-water plants to minimize irrigation needs and meeting City of Seattle Street Tree requirements. The County may wish to pursue negotiation with the City to adjust their standards to work with LEED strategies.
2. The project team should consider inclusion of the site area in between each project on the A/C Base as part of the North Yard project. This could result in uniform standards for

paving, lighting, and landscaping that meet the requirements set forth by LEED and the GBI.

Table 2.11: Atlantic/Central Base North Yard LEED Scorecard

Atlantic/Central Base North Yard — **LEED™ Scorecard**

Project Manager:	George Mitacek	**Points Achieved/Probable (Yes column):**	12
Phase:	Design	**Additional / Potential Points (?/Maybe column):**	8
Covered by KCGBI [1]:	Yes	**Ratio of Achieved / Applicable:**	44%
Registered w/USGBC:	n/a	**Equivalent LEED™ Rating**	Certified

12 | 8 | 7 — Total Project Score — Possible Points 27

Certified 10 to 13 points Silver 13 to 15 points Gold 15 to 20 points Platinum 20 or more points

6 | 4 | 4 — Sustainable Sites — Possible Points 14

Y	?	N			
Y			Prereq 1	**Erosion & Sediment Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
	1		Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
	1		Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
	1		Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
	1		Credit 8	**Light Pollution Reduction**	1

1 | 1 — Water Efficiency — Possible Points 2

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
	1		Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		NA	Credit 2	**Innovative Wastewater Technologies**	
		NA	Credit 3.1	**Water Use Reduction**, 20% Reduction	
		NA	Credit 3.2	**Water Use Reduction**, 30% Reduction	

Energy & Atmosphere — Possible Points

Y	?	N			
		NA	Prereq 1	**Fundamental Building Systems Commissioning**	
		NA	Prereq 2	**Minimum Energy Performance**	
		NA	Prereq 3	**CFC Reduction in HVAC&R Equipment**	
		NA	Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	
		NA	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	
		NA	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	
		NA	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	
		NA	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	
		NA	Credit 2.1	**Renewable Energy**, 5%	
		NA	Credit 2.2	**Renewable Energy**, 10%	
		NA	Credit 2.3	**Renewable Energy**, 20%	
		NA	Credit 3	**Additional Commissioning**	
		NA	Credit 4	**Ozone Depletion**	
		NA	Credit 5	**Measurement & Verification**	
		NA	Credit 6	**Green Power**	

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

3 | 2 | 1 — Materials & Resources — Possible Points 6

Y	?	N			
		NA	Prereq 1	**Storage & Collection of Recyclables**	
		NA	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	
		NA	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	
		NA	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	
	1		Credit 2.1	**Construction Waste Management**, Divert 50%	1
	1		Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
1			Credit 4.1	**Recycled Content**, Specify 25%	1
		1	Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Indoor Environmental Quality — Possible Points 0

Y	?	N			
		NA	Prereq 1	**Minimum IAQ Performance**	
		NA	Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	
		NA	Credit 4.2	**Low-Emitting Materials**, Paints	
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**	
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

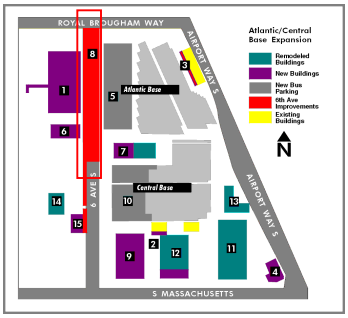
2 | 1 | 2 — Innovation & Design Process — Possible Points 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Exemplary Performance: Heat Island Reductn	1
1			Credit 1.2	**Innovation in Design**: Alt Trans - Enable Mass Transit	1
		1	Credit 1.3	**Innovation in Design**: Education Program	1
		1	Credit 1.4	**Innovation in Design**: Specific Title	1
1			Credit 2	**LEED™ Accredited Professional**	1

Project Type 3: Street Improvements

Project 11: Atlantic/Central Base Street

Figure 2.10: Atlantic/Central Base Site Map



Project Description

The Atlantic/Central Base Expansion also consists of street improvements to the northern part of 6th Avenue South. Asphalt waste from the demolition of the existing street is being considered for use as structural fill underneath the street, and at the adjoining North Yard bus lot. The street improvement also includes installation of street trees and landscaping on both sides of 6th Avenue South, and includes street lighting.

Project LEED Assessment

Street improvements are not specifically addressed by the LEED Rating System. Many credits do not apply to streets, such as all credits under the Energy & Atmosphere and Indoor Environmental Quality categories. These credits have been listed as Not Applicable (NA) in the table below and removed from the denominator, or total possible points. Even though the scope of the project precludes a LEED rating, many LEED principles are still applicable.

The A/C Base Street Improvement project is covered by the GBI. Based on an adjusted point total, removing non-applicable points, the project is pursuing 41% of remaining points, or an Equivalent LEED Rating of Certified. Currently 11 of points are marked as 'Yes' points. Pursuing 2 of the 11 'Maybe' points would bring the project up to an Equivalent LEED Rating of Silver. Refer to Table 2.12 for a detailed credit breakdown.

Project LEED Issues

Please see the Project LEED Issues identified under Project 1: Atlantic/Central Base Tire & Millwright Shop for issues pertaining to the campus approach generally accepted by the USGBC. This approach will earn the project points in the Sustainable Sites and Water Efficiency categories. Other project LEED issues were identified as follows:

1. There is a conflict between installing low-water plants to minimize irrigation needs and meeting City of Seattle Street Tree requirements. The County may wish to pursue negotiation with the City to adjust their standards to work with LEED strategies.
2. There may also be a conflict between SeaTrans street construction requirements and the County's desire to incorporate reclaimed asphalt from the street demolition

project. Furthermore, it is unclear whether the City standards permit fly-ash in the concrete mix. The County may wish to pursue negotiation with the City to adjust their standards to work with LEED strategies. It is also unknown whether the City of Seattle lighting standards meet the requirements set forth by LEED. The County may also work with the City to adjust to requirements to meet LEED requirements for SSc8 Light Pollution Reduction.

3. Instead of providing permanent landscape irrigation, sidewalks will slope towards the planting strips, directing rainwater to act as 'raingarden' landscape irrigation. Furthermore, diverting the rainwater away from the street minimizes stormwater flows and allows for stormwater conveyance to be downsized.

Table 2.12: Atlantic/Central Base Street Improvements LEED Scorecard

Atlantic/Central Base Street Improvements — **LEED™ Scorecard**

Project Manager: Mike Stanaszek
Phase: Design
Covered by KCGBI [1]: Yes
Registered w/USGBC: N/A

Points Achieved/Probable (Yes column): 11
Additional / Potential Points (?/Maybe column): 11
Ratio of Achieved / Applicable: 41%

Equivalent LEED™ Rating: Certified

11 | 11 | 5 — Total Project Score — Possible Points 27

Certified 10 to 13 points Silver 13 to 15 points Gold 15 to 20 points Platinum 20 or more points

Sustainable Sites — Possible Points 14

Y	?	N			
Y			Prereq 1	**Erosion & Sedimentation Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
	1		Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
	1		Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
	1		Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
	1		Credit 8	**Light Pollution Reduction**	1

Water Efficiency — Possible Points 2

Y	?	N			
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
	1		Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		NA	Credit 2	**Innovative Wastewater Technologies**	
		NA	Credit 3.1	**Water Use Reduction**, 20% Reduction	
		NA	Credit 3.2	**Water Use Reduction**, 30% Reduction	

Energy & Atmosphere — Possible Points

Y	?	N			
		NA	Prereq 1	**Fundamental Building Systems Commissioning**	
		NA	Prereq 2	**Minimum Energy Performance**	
		NA	Prereq 3	**CFC Reduction in HVAC&R Equipment**	
		NA	Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing	
		NA	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing	
		NA	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing	
		NA	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing	
		NA	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing	
		NA	Credit 2.1	**Renewable Energy**, 5%	
		NA	Credit 2.2	**Renewable Energy**, 10%	
		NA	Credit 2.3	**Renewable Energy**, 20%	
		NA	Credit 3	**Additional Commissioning**	
		NA	Credit 4	**Ozone Depletion**	
		NA	Credit 5	**Measurement & Verification**	
		NA	Credit 6	**Green Power**	

Materials & Resources — Possible Points 6

Y	?	N			
		NA	Prereq 1	**Storage & Collection of Recyclables**	
		NA	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	
		NA	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	
		NA	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	
	1		Credit 2.1	**Construction Waste Management**, Divert 50%	1
	1		Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
	1		Credit 4.1	**Recycled Content**, Specify 25%	1
		1	Credit 4.2	**Recycled Content**, Specify 50%	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
1			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Indoor Environmental Quality — Possible Points 0

Y	?	N			
		NA	Prereq 1	**Minimum IAQ Performance**	
		NA	Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	
		NA	Credit 2	**Increase Ventilation Effectiveness**	
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction	
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	
		NA	Credit 4.2	**Low-Emitting Materials**, Paints	
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet	
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood	
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**	
		NA	Credit 6.1	**Controllability of Systems**, Perimeter	
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter	
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	

Innovation & Design Process — Possible Points 5

Y	?	N			
	1		Credit 1.1	**Innovation in Design**: Exemplary Performance: Heat Island Reductn	1
1			Credit 1.2	**Innovation in Design**: Alt Trans - Enable Mass Transit	1
	1		Credit 1.3	**Innovation in Design**: Education Program	1
	1		Credit 1.4	**Innovation in Design**: Rain Garden	1
1			Credit 2	**LEED™ Accredited Professional (PM is a LEED AP)**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project Type 4: Demolition Projects

Project 12: Atlantic / Central Base Expansion Demolition

Figure 2.11: Atlantic/Central Base Site Map

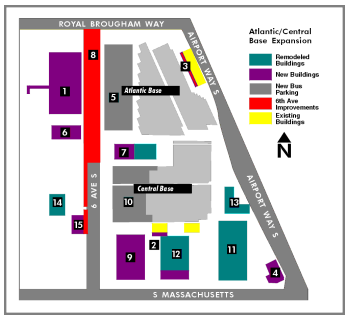


Figure 2.12: Atlantic/Central Base Expansion Demolition

Project Description

In order to create space for the Atlantic / Central Base Expansion, land adjoining the existing A / C Base was purchased, along with an existing warehouse covering two city blocks or 7.5 acres. The building was demolished and recycled to create space for bus parking and a parking garage. A total of 18,592 tons of material was salvaged from the demolished building at an 84% recycling / reuse rate. Materials salvaged were concrete, steel and copper, and old-growth wood beams. Also recovered was 8,000 cubic yards of soil reused on the A / C base site. The LEED calculation methodolgy does not account for soil recycling.

Project LEED Assessment

Building demolition on its own is not specifically addressed by the LEED Rating System, however other projects located at the A / C Base can benefit from this projects achievement by taking a 'campus' approach to LEED. The LEED categories that do apply for the Demolition are Sustainable Sites and Materials and Resources. The remaining credits do not apply to Demolition and have been listed as Not Applicable (NA) in the table below and removed from the denominator, or total possible points. Even though the scope of the project precludes a LEED rating, many LEED principles are still applicable.

The A / C Base Demolition project is covered by the GBI. A number of LEED strategies were implemented during the demolition. Because so few points are applicable, and a large number of irrelevant points have been removed from the denominator, the project is pursuing 9 of the 13 (or 69%) of the total available points, for an Equivalent LEED Rating of Gold. Refer to Table 2.13.

Project LEED Issues

Please see the Project LEED Issues identified under Project 1: Atlantic / Central Base Tire & Millwright Shop for issues pertaining to the campus approach generally accepted by the USGBC. This approach will earn the project points in the Sustainable Sites and Water Efficiency categories.

Other project LEED issues were identified as follows:

1. Soil is not permitted for inclusion in the LEED calculation methodology for MRc2.1 and c2.2 Construction Waste Management. If LEED did consider soil in this calculation, the recycling rate for this project would be 90%, rather than 84%.
2. Bid documents included green specifications and a construction waste management plan which helped achieve such a high recycling rate. Salvaged materials research was included in the scope of work, which included researching the best end uses for each material salvaged, pricing of these materials and proper salvage and disposal methods. Research was factored into the demolition schedule.
3. From a demolition perspective, the project was successful due to the large site area that allowed for stockpiling of materials and equipment. This made scheduling deconstruction less challenging and lowered equipment costs.

Table 2.13: Atlantic/Central Base Expansion Demolition LEED Scorecard

Atlantic/Central Base Demolition — **LEED™ Scorecard**

Project Manager: Mike Stanaszek
Phase: Demolition Complete
Covered by KCGBI [1]: Yes
Registered w/USGBC: N/A

Points Achieved/Probable (Yes column): 9
Additional / Potential Points (?/Maybe column):
Ratio of Achieved / Applicable: 69%

Equivalent LEED™ Rating: Gold

9 | | 4 Total Project Score — Possible Points 13

Certified 5 to 6 points Silver 6 to 7 points Gold 7 to 10 points Platinum 10 or more points

Sustainable Sites — Possible Points 9

Y	?	N			
Y			Prereq 1	**Erosion & Sediment Control**	
1			Credit 1	**Site Selection**	1
		1	Credit 2	**Urban Redevelopment**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1			Credit 4.3	**Alternative Transportation**, Alternative Fuel Refueling Stations	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		NA	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	
		1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
		NA	Credit 6.2	**Stormwater Management**, Treatment	
		NA	Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	
		NA	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	
		NA	Credit 8	**Light Pollution Reduction**	

Water Efficiency — Possible Points

Y	?	N		
		NA	Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%
		NA	Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation
		NA	Credit 2	**Innovative Wastewater Technologies**
		NA	Credit 3.1	**Water Use Reduction**, 20% Reduction
		NA	Credit 3.2	**Water Use Reduction**, 30% Reduction

Energy & Atmosphere — Possible Points

Y	?	N		
		NA	Prereq 1	**Fundamental Building Systems Commissioning**
		NA	Prereq 2	**Minimum Energy Performance**
		NA	Prereq 3	**CFC Reduction in HVAC&R Equipment**
		NA	Credit 1.1	**Optimize Energy Performance**, 20% New / 10% Existing
		NA	Credit 1.2	**Optimize Energy Performance**, 30% New / 20% Existing
		NA	Credit 1.3	**Optimize Energy Performance**, 40% New / 30% Existing
		NA	Credit 1.4	**Optimize Energy Performance**, 50% New / 40% Existing
		NA	Credit 1.5	**Optimize Energy Performance**, 60% New / 50% Existing
		NA	Credit 2.1	**Renewable Energy**, 5%
		NA	Credit 2.2	**Renewable Energy**, 10%
		NA	Credit 2.3	**Renewable Energy**, 20%
		NA	Credit 3	**Additional Commissioning**
		NA	Credit 4	**Ozone Depletion**
		NA	Credit 5	**Measurement & Verification**
		NA	Credit 6	**Green Power**

Materials & Resources — Possible Points 2

Y	?	N			
		NA	Prereq 1	**Storage & Collection of Recyclables**	
		NA	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	
		NA	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Shell	
		NA	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		NA	Credit 3.1	**Resource Reuse**, Specify 5%	
		NA	Credit 3.2	**Resource Reuse**, Specify 10%	
		NA	Credit 4.1	**Recycled Content**, Specify 25%	
		NA	Credit 4.2	**Recycled Content**, Specify 50%	
		NA	Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	
		NA	Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	
		NA	Credit 6	**Rapidly Renewable Materials**	
		NA	Credit 7	**Certified Wood**	

Indoor Environmental Quality — Possible Points 0

Y	?	N		
		NA	Prereq 1	**Minimum IAQ Performance**
		NA	Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**
		NA	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**
		NA	Credit 2	**Increase Ventilation Effectiveness**
		NA	Credit 3.1	**Construction IAQ Management Plan**, During Construction
		NA	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy
		NA	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants
		NA	Credit 4.2	**Low-Emitting Materials**, Paints
		NA	Credit 4.3	**Low-Emitting Materials**, Carpet
		NA	Credit 4.4	**Low-Emitting Materials**, Composite Wood
		NA	Credit 5	**Indoor Chemical & Pollutant Source Control**
		NA	Credit 6.1	**Controllability of Systems**, Perimeter
		NA	Credit 6.2	**Controllability of Systems**, Non-Perimeter
		NA	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992
		NA	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System
		NA	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces
		NA	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces

Innovation & Design Process — Possible Points 2

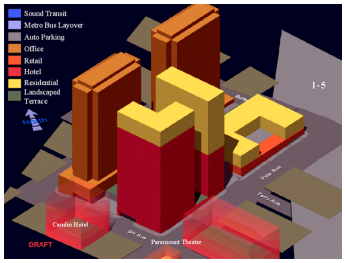
Y	?	N			
1			Credit 1.1	**Innovation in Design**: Exemplary Recycling/Reuse Rate 84%	1
		NA	Credit 1.2	**Innovation in Design**: Specific Title	
		NA	Credit 1.3	**Innovation in Design**: Specific Title	
		NA	Credit 1.4	**Innovation in Design**: Specific Title	
1			Credit 2	**LEED™ Accredited Professional**	1

Note1: Projects marked "Yes" were in the planning or predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Project Type 5: Mixed Use / Transit Oriented Development

Project 13: Convention Place Station Transit Oriented Development

Figure 2.13: Conceptual Study of the Convention Place Station



Project Description

The Convention Place Station Transit Oriented Development (TOD) project is located at the northern most Metro bus tunnel station in downtown Seattle at 9th Avenue and Pine Street. Early concepts call for developing a mixed-use site, combining bus /train station, parking garage, retail, office and housing units. The four acre project might include five to six skyscrapers, an urban plaza, underground parking and bus layover, and bus ramps to Terry Avenue and I-5.

Project LEED Assessment

The project is still early in the planning phase. Due to the preliminary stage of development of this project, a LEED assessment is not available at this time. The Division plans to incorporate LEED principles in the transit portion of the project. Developers completing the mixed-use portions would be required to achieve LEED certification for each building.

Section 3:

Transit Division LEED Assessment

The King County Transit Division has embraced the Green Building Initiative and is incorporating LEED principles on a wide selection of building projects. Of the 13 projects reviewed nine are covered by the King County Green Building Initiative and are therefore encouraged by the initiative to either achieve a LEED rating or, due to scope, incorporate relevant LEED principles. Four of the nine projects are of sufficient scope to apply for LEED certification, and three are currently registered with the USGBC. A summary of overall LEED progress for the Transit Division is shown in Table 3.1.

KC Transit Division Projects Pursuing LEED Ratings

The Atlantic Central Base Tire and Millwright Shop and the Communications and Control Center are both on target for a LEED Rating of Certified. These projects are in the later stages of design development. The project teams can possibly achieve a LEED Silver Rating if a directive comes from the Transit Division to do so. In this case, an analysis of the 'Maybe' LEED credits should be performed to determine the areas where the greatest benefit can be achieved for the least cost.

The Power Distribution Headquarters (PDH) is pursuing LEED Certification, although it did not fall under the directive of the initiative, as it was finished with predesign prior to adoption of the GBI. PDH is too far along in the design process to push for LEED Silver without impacting the established budget. The project is now in the process of negotiating the construction contract and has planned LEED Contractor Training to support LEED implementation and documentation.

The Metro North Facilities project can easily earn a LEED Silver Rating due to the early stage of the project. If LEED Silver is set as a performance goal early, the team can begin to design the project to pursue this rating with a relatively low incremental cost add and without much effort on behalf of the Project Manager and design team.

KC Transit Division Projects Incorporating LEED Principles Applicable to Scope

All of the parking facilities are on target to earn a LEED Equivalent Rating of Certified.

For the parking garages, the standard LEED rating system applies, except for the Indoor Environmental Quality category. Since the majority of the IEQ section does not apply to parking garages, as well as a number of other credits, this type of project is not directly addressed by the LEED for New Construction Rating System due to scope and cannot attain a LEED rating. The degree to which the Transit Division is incorporating the remaining LEED principles in their parking facilities is commendable and supports the GBI.

The Atlantic / Central Base North Yard, Street Improvements and Demolition are both projects that preclude an actual LEED rating, and few of the LEED credits, as written, apply. However, both of these projects are incorporating LEED principles where they apply.

Table 3.1: Transit Division LEED Summary

Project Name	Covered by KCGBI [1]	Expected Points Applicable	Expected Point Achievable	Percent Achievable Range	Expected Rating (from low side of range)		Possible Rating (from high side of range)	LEED Rating or Equivalent LEED Rating
Atlantic/Central Base Tire and Millwright Shop*	Yes	69	27 to 43	39% to 62%	Certified	--	Silver	LEED™ Rating
Communications and Control Center*	Yes	69	28 to 46	40% to 67%	Certified	--	Silver	LEED™ Rating
Power Distribution Headquarters	No (but opted yes)	69	29 to 32	42% to 46%	Certified	--	Certified	LEED™ Rating
Metro Facilities North	Yes	NA	NA	NA	NA	--	NA	LEED™ Rating
Atlantic/Central Base Employee Parking Garage*	No (but opted yes)	54	22 to 29	41% to 54%	Certified	--	Silver	Equivalent LEED™ Rating
Eastgate Park & Ride / Interim Lot	No (but opted yes)	47	14 to 23	29% to 49%	Not Certified (Certification Equivalent Possible)	--	Certified	Equivalent LEED™ Rating
Redondo Heights Park & Ride	No (but opted yes)	47	17 to 25	36% to 53%	Not Certified (Certification Equivalent Possible)	--	Certified	Equivalent LEED™ Rating
Issaquah Highlands Park & Ride / Interim Lot	Yes	47	20 to 27	43% to 57%	Certified	--	Certified	Equivalent LEED™ Rating
Burien Transit Center	Yes	50	19 to 32	38% to 64%	Not Certified (Certification Possible)	--	Certified	Equivalent LEED™ Rating
Atlantic/Central Base North Yard*	Yes	27	12 to 20	44% to 74%	Silver	--	Silver	Equivalent LEED™ Rating
Atlantic/Central Base Street Improvements*	Yes	27	11 to 22	40% to 82%	Certified	--	Certified	Equivalent LEED™ Rating
Atlantic/Central Base Demolition*	Yes	13	9 to 9	69% to 69%	Gold	--	Gold	Equivalent LEED™ Rating
Convention Place Station Transit Oriented Development	Yes	NA	NA	NA	NA	--	NA	LEED™ Rating

NA = Not Available as project is in preliminary stage.
* Projects marked with an asterisk (*) can share site ammenities to claim points in the Sustainable Sites section by taking a 'campus approach'
Note[1]: Projects marked "Yes" were in the planning and predesign phase when the King County Green Building Initiative was passed in October of 2001and are therefore covered by the initiative.

Transit Division LEED Achievements

It is commendable that all projects assessed are pursuing LEED criteria, regardless of whether they fall within the directive of the GBI passed in October 2001. Furthermore, three projects are registered with the USGBC, signaling the intention and commitment of the Transit Division to push the envelope and lead the other King County Divisions in sustainable building. The following is an overview of the achievements in 2003:

Sustainable Sites

1. Urban Redevelopment- Transit Oriented Developments often act as a transportation hub and therefore a catalyst for dense urban communities to evolve. Paired with a Community Master Plan, the Issaquah Highlands Park & Ride is an integral part of the Port Blakely Community currently growing in both density and scale. Furthermore, the Burien Transit Center and the Convention Place Station may qualify for achievement of this credit.

2. Brownfield Redevelopment- Site remediation was performed by two projects, both the Redondo Heights Park & Ride, and at the site of the Atlantic/Central Base Expansion Demolition. Although not classified by as a brownfield by the EPA, the intent of the credit was met through rehabilitating damaged sites thus reducing pressure on undeveloped land.

3. Alternative Transportation- Transit projects by nature clearly achieve the intent of the LEED Alternative Transportation credits, which is to "Reduce pollution and land development impacts from automobile use." To further this goal, the Atlantic/Central Base Employee Parking Garage is providing 32 alternative fuel-refueling stations to encourage electric vehicle usage at the base.

4. Protect or Restore Open Space- One quarter of the site area at the Issaquah Highlands Park & Ride will be landscaped with native, drought tolerant plantings-creating habitat for local ecosystems to thrive.

5. Landscape & Exterior Design to Reduce Heat Islands (Non-Roof)- The Power Distribution Headquarters is anticipating credit achievement for Non-Roof Landscape & Exterior Design to Reduce Heat Islands. The project provides 57.6% reduction in the heat island effect through light colored concrete paving. The paving specifications may be accessible from this project for use by other projects pursuing this credit.

6. Light Pollution Reduction- Overall, exterior light fixtures have been selected to shield neighboring sites from direct beam illumination. Specifically, the Issaquah Highlands Park & Ride utilizes low walls and perforated metal art screens to shield light trespass from car headlights into the neighboring property. Furthermore, the A/C Base Employee Parking garage utilized the expertise of an external lighting consultant. The consultant was hired to develop the lighting specifications and to ensure lighting complies with SS credit 8. Furthermore, energy efficient lighting was specified. This information may be shared and/or incorporated into a Master Specification or Transit Division guidelines to be utilized by this and other projects.

Water Efficiency

7. Water Efficient Landscaping- Drought tolerant plants, xeriscaping and high efficiency irrigation (where irrigation is required) have been implemented on several Transit projects. Water used to clean sidewalks will run off into the landscaping strips, providing needed irrigation. A 'rain garden' may be implemented at the A/C Base Street Improvement project. The 'rain garden' consists of a sidewalk, which gently slopes towards the landscape strips, providing needed irrigation to adjacent landscaping. Sloping sidewalks to drain to landscape strips reduces the infrastructure needed to collect, convey and process stormwater.

8. Water Use Reduction- Power Distribution Headquarters utilizes low flow fixtures and waterless urinals to achieve a 32% reduction over baseline water use. All Transit Division projects may benefit from the knowledge gained from the project regarding water use-reduction strategies at the Power Distribution Headquarters.

Energy & Atmosphere

9. Optimize Energy Performance- Energy-efficient metal halide exterior lighting has been included in the designs of the parking garages, park and ride lots and exterior building lighting. Photocells are used at parking facilities to control exterior lighting operation. The goal for the Power Distribution Headquarters is a 20% energy savings compared to the ASHRAE 90.1-1999 baseline. Furthermore, lighting and electric heating at the Eastgate Park & Ride utilize occupancy sensors to deliver light and heat only when required, saving electricity and associated costs.

10. CFC Reduction- The Power Distribution Headquarters utilizes R-22 refrigerant in the chillers for the base building condition equipment.

11. Ozone Depletion- A clarification was made after the interviews were conducted regarding this credit. Projects that do not provide mechanical cooling achieve both the prerequisite for CFC Reduction and the credit for Ozone Depletion on the basis that the strategy employed (non-mechanical cooling, i.e., operable windows) eliminates CFC's, HCFC's and Halons. All project scorecards have been updated to reflect this.

12. Additional Commissioning- The Power Distribution Headquarters incorporates additional commissioning into the specifications. These specifications can be used to implement commissioning on other County projects.

Materials & Resources

13. Construction Waste Management- The A/C Base Expansion Demolition salvaged a total of 18,592 tons of material for an 84% recycling/reuse rate. Furthermore, the project manager for the Power Distribution Headquarters had Paladino develop Construction Waste Management specifications. These specifications include King County specification language and LEED language. Furthermore, Division 1 of the Power Distribution Headquarters specification contains a LEED Section (Section 01150) that should be adapted for general Transit LEED project use.

Indoor Environmental Quality

14. Parking Facilities- For the parking facilities, most of the IEQ credits and prerequisites do apply, due the nature of the project as being unenclosed space. The Burien Transit Center is pursuing the IEQ prerequisite for Environmental Tobacco Smoke Control and IEQ credit 4 for Low Emitting Materials, even though they are outside the scope of the LEED Equivalent Rating. The Transit Division should pursue these measures for all LEED Equivalent projects.

Innovation in Design

15. Asphalt Demolition and Reuse On-Site- Several Transit projects may be able to demonstrate exemplary achievement for construction waste management. Projects considering this are the A/C Base North Yard, the A/C Base Street Improvements, and the Eastgate and Issaquah Highlands Park & Rides.

16. Exemplary Performance in Construction Waste Management- A credit may be achieved by all of the Atlantic/Central Base projects. First, co-mingled construction waste recycling rates are extremely high in the King County area. Secondly, following the campus approach may allow the projects to include both demolition and construction waste management into the calculation, due to the high recycling rates for the A/C Base Expansion Demolition project. Review the Credit Interpretation Rulings on the USGBC website for established precedent to verify inclusion of demolition waste in the calculation methodology.

17. Alternative Transportation Enable Mass Transit through P&R Lot- The nature of King County Transit projects contribute to increased usage of alternative transportation. The A/C Base and Park & Ride projects, by nature, meet the intent of the Alternative Transportation credits. This is achieved through reducing pollution and land development impacts associated with automobile use.

Transit Division LEED Challenges & Recommendations

Sustainable Sites

1. Site Boundaries- All new construction projects that are part of the Atlantic/Central Base expansion should consider taking a 'campus approach' when determining the site boundary for LEED calculation purposes. Utilizing the campus approach allows all projects to effectively share sustainable strategies, capitalizing on points attainable in the Sustainable Sites category. This campus approach is acceptable to the USGBC with the requirement that all projects consistently utilize the same site boundary throughout the application process. An analysis of the campus approach versus the individual project approach is recommended to understand how the projects affect each other. It may be possible to revise projects to meet the thresholds established by LEED if the analysis is completed early in 2004.

2. Alternative Transportation, Alternate Fuel Refueling Stations- The A/C Base Employee Parking Garage is installing 32 alternative fuel-refueling stations. Monitoring of these stations is suggested to determine the effectiveness of this technology. For future projects, examine the feasibility of other alternative fuel vehicle technologies.

3. Reduced Site Disturbance, Protect or Restore Open Space- This credit is difficult for parking facilities to achieve based on the nature of the project type. In urban settings, paving encompasses a large portion of site. In the future, the Transit Division should include the LEED open space requirements as a programmatic requirement. Green roofs may be an option to increase open space if used on below-grade garages.

4. Landscape & Exterior Design to Reduce Heat Islands, Roof- The Transit Division voiced concerns over the perceived costs of green roof technology. The Transit Division should examine the benefits and associated costs of green roof technology. Green roofs offer an opportunity to educate others on managing stormwater and mitigating temperature increases within the building microclimate. They also extend the life of the roof membrane, and offer insulative value.

5. Light Pollution Reduction- Reducing light levels to achieve illumination levels required by LEED for light pollution reduction is constrained by the level of security needed at the parking facilities. High quality lighting design can create equivalent security with reduced illumination levels.

Investigation is required to determine the best balance of security, light pollution, energy consumption and cost considerations. The Transit Division should consider creating a standard specification or guideline that meet the criteria set forth by IESNA while maintaining acceptable security lighting levels, as established by the A/C Base Employee Parking Garage and the Issaquah Highlands Park & Ride.

Water Efficiency

1. Site Boundaries- All new construction projects that are part of the Atlantic/Central Base expansion should consider taking a 'campus approach' when determining the site boundary for LEED calculation purposes. Utilizing the campus approach allows all projects to effectively share sustainable strategies, capitalizing on points attainable for Water Efficiency Landscaping.

2. Water Efficient Landscaping- Determine whether local street tree and landscaping requirements meet or exceed the requirements set forth by LEED. If not, work with the local Department of Transportation to require that street tree and landscaping requirements meet or exceed LEED Partner with other jurisdictions that often have influence over the project. For example, work with Seattle to develop street tree standards that include low-water varieties.

3. Innovative Waste Water Technologies- Investigate performance and maintenance issues prohibiting waterless fixtures and rainwater catchment. Strategies may include conducting research, and visiting projects with waterless urinals, composting toilets, Living Machine systems and rainwater systems. Testimonials are also valuable in determining true maintenance and usage issues and performance. In the case of rainwater catchment, effectively 'hiding' this strategy from plain view with an underground cistern may satisfy the visual reluctance of this strategy.

   Division and County direction is needed to prioritize when and where waterless fixtures and rain water harvesting could be implemented, and subsequent support would be required to allow these strategies to be added to project scopes and budgets. Furthermore, consider developing a policy that balances maintenance issues with water use reduction goals.

Energy & Atmosphere

1. Building Systems Commissioning- Commissioning, both basic and advanced, has a limited application for parking and garage projects. The building systems in a parking garage that may benefit from commissioning include lighting and irrigation. Advanced commissioning may be helpful in establishing standards for lighting design for all Transit parking facilities. Once this is completed, several of the advanced commissioning tasks would be already completed for any facilities that use the standards developed.

2. Additional Commissioning- Between the office and parking facility projects, there was discussion regarding the benefit and need for advanced commissioning. Advanced commissioning solicits input from a commissioning agent during design phases when such input can still affect the actual design of the project. This increases the potential for optimizing the size, configuration, type and energy consumption of various building systems. Project managers have consistently expressed a desire for further direction regarding advanced commissioning. The County or the Transit Division may want to review internal priorities and determine whether or not advanced commissioning is to be encouraged.

3. Renewable Energy- The A/C Base Tire & Millwright Shop and Communications and Control Center project team did discuss incorporating renewable energy generation systems, such as photovoltaics. However, due to budget constraints, such systems were not feasible. Another constraint was the difficulty and the amount of time required for pursuing approval for additional expenditure even if a grant was obtained to fund renewable power generation. These credits could be attained through an operations policy.

4. Measurement & Verification- A Transit Division or County direction regarding measurement and verification (M&V) of energy use is required. Project managers expressed uncertainty regarding whether or not and when they should be including M&V equipment. Depending on the scope of the project, equipment may include meters, sub-meters, duct, motor, damper and other sensors, data-loggers, and computers. For projects where a building automation system (BAS) or energy management system (EMS) is being installed, a large portion of the M&V requirements have been met; with the addition of a plan outlining how data will be collected, analyzed and used to direct maintenance and repair efforts the M&V credit can be obtained. The larger

benefit however is the potential to reduce costs associated with energy consumption. For smaller projects where BAS or EMS are not necessary, a County or Division M&V strategy could be developed.

5. Green Power- Teams who wish to pursue the Green Power credit are unable to do so as power purchase falls under the realm of the Operations Budget rather than the Construction Budget. However, if the County determines that green power is a strategy that it would like to consider, coordination of the operations and construction budgets will be required. To support such coordination, a Life Cycle Assessment process would also be required, to provide decision makers the information necessary to be able to weigh various options (first cost, operating costs, maintenance and replacement costs, life cycle period being considered). Investigate the potential for determining County priorities and policies for purchasing green power, installing renewable energy generation equipment, harvesting rain water, measurement and verification, and recycling at park and ride facilities. A coordination process for construction and operations budgets, including life cycle analysis, is needed.

Materials & Resources

1. Storage & Collection of Recyclables- Project managers indicated several obstacles to providing recycling collection at park and ride lots: vandalism, Washington Department of Transportation regulations, and maintenance issues. A closer look at the pros and cons of recycling at park and rides may reveal ways to overcome these barriers, or determine that recycling is truly not feasible at these facilities. As recycling collection and storage is a prerequisite of LEED, investigation of this issue is critical to remain true to the GBI.

2. Construction Waste Management- Although the County has developed Construction Waste Management (CWM) Specifications and has a CWM policy requiring County projects to achieve a 75% recycling rate, project teams were often unaware of the CWM Specifications available for their use or uncertain of the likelihood they would achieve the 75% rate. Methods for making project managers aware of County resources available and recycling rates typical for previous projects need to be developed, expanded or promoted.

3. Contractor Training- The Transit Division should provide contractor training to facilitate LEED credit achievement for those MR credits where the contractor plays an integral role.

Indoor Environmental Quality

1. Environmental Tobacco Smoke Control- Apply a King County no smoking policy at garage entrances and in elevators.
2. Low-Emitting Materials- Low-VOC adhesives, sealants and paints should be considered for all projects, not just the building projects. Research and include LEED compliant adhesives, sealants and paints the Master Specifications or policy guidelines.
3. Daylight and Views- Natural daylighting is proven to result in enhanced worker satisfaction and a decrease in absenteeism. Investigate the barriers to achieving these two credits. The Transit Division may consider these credits as another programmatic requirement for inclusion in pre-design.
4. Contractor Training- The Transit Division should provide contractor training to facilitate LEED credit achievement for those EQ credits where the contractor plays an integral role.

Innovation in Design

1. Innovation in Design- For Innovation in Design Credit achievement, the project must prove exemplary performance through documented achievement to qualify. Where an ID credit is being pursed for exemplary performance for an existing credit, the next incremental threshold must be met. Challenges for the Transit Division are that some ID credits are cost prohibitive, or the project type does not allow for innovations. The Transit Division may review the Credit Interpretation Rulings on the USGBC website to determine whether the precedent set by other projects is relevant to Transit Division projects.
2. Innovation in Design, Asphalt Re-Use- Work with the Seattle Department of Transportation to re-use ground asphalt from the A/C Base Street demolition in the street improvement along 6th Avenue South.
3. Innovation in Design, Education Program- This is an Innovation credit commonly awarded to projects that take advantage of the educational value of the green building features of a project. King County projects can educate both staff and the public by creating an actively instructional educational approach. Two of the following three elements must be included in the educational program to qualify for this credit: 1) A comprehensive signage program built into the building's spaces to educate the occupants and visitors of the benefits of green buildings. This program may include

windows to view energy-saving mechanical equipment or signs to call attention to water conserving landscape features. 2) The development of a manual, guideline or case study to inform the design of other buildings based on the successes of this project. This manual will be made available to the USGBC for sharing with other projects. 3) An educational outreach program or guided tour could be developed to focus on sustainable living, using the project as an example.

4. Innovation in Design, Potential Credits- Consider creating an educational program for all public projects such as parking facilities and transit- oriented developments Think outside the scope of LEED-Areas for improvement under the GBI may include establishing green procurement policies in the areas of green housekeeping, interiors, furniture, low-mercury containing light bulbs and others. Other LEED Rating Systems such as LEED for Existing Buildings, and / or LEED for Commercial Interiors may be a point of departure for greening interiors and operations at King County projects. Review the Credit Interpretation Rulings (CIRs) on the USGBC website www.usgbc.org to get more ideas for Innovation in Design Credits related to procurement policies acceptable to the USGBC.

Transit Division Project Trends

Transit projects are consistently incorporating LEED principles. The following sections describe trends, including achievements and challenges, within the Division projects reviewed.

Many LEED credits are achieved by County projects due to King County, State of Washington or local municipality codes and requirements, as illustrated in Table 3.2.

Despite the application of LEED across the building portfolio reviewed however, the projects do not appear to be fully taking advantage of the resources that they are independently developing. Multiple green parking garages and office buildings are now underway; the lessons learned and tools developed by these projects need to be codified and made accessible by all Transit Project Managers to facilitate future Transit LEED projects in the most efficient and effective manner possible. This not only results in greater potential for positive environmental impact but also streamlines the project design and implementation process for the County.

Table 3.2: Credits Achieved by Projects Located in King County

Credits Achieved by Projects Located in King County	
SSp1	King County Stormwater regulations exceed EPA BMPs required for this erosion and sedimentation control prerequisite. Standard County stormwater management and treatment is sufficiently high to expect the Stormwater Treatment credit.
SSc6.2	King County Stormwater regulations exceed EPA BMPs required for this erosion and sedimentation control prerequisite. Standard County stormwater management and treatment is sufficiently high to expect the Stormwater Treatment credit.
EAp1	Transit Division policy requires basic commissioning for all projects. Internal staff perform commissioning tasks for non-HVAC systems. External consultants are hired on a project basis for HVAC systems, and other specialty systems as required.
EAp2	The WSEC (Washington State Energy Code) adopted ASHRAE 90.1-1999 and has amended some sections, making them more stringent. Therefore this prerequisite is achieved.
EAc1	The WSEC and SEC (Seattle Energy Code) are both more stringent than ASHRAE 90.1-1999. For projects located in King County and Seattle, equivalency tables could be established to verify the extent to which the local codes are stricter than the LEED require
EQp1	Washington State Ventilation Code is very similar to the required ASHRAE Standard 62. A small effort by the mechanical engineer to make sure both regulations are met by the project will address both building permit and LEED credit requirements.
EQp2	A No Smoking policy is standard within occupied County buildings. This policy could be extended to garages and other semi-occupied or non-enclosed spaces.

King County Transit LEED Slam-Dunk Scorecard

The "slam-dunk" scorecard is a snapshot of the green building trends for a number of LEED projects currently underway by the Transit Division. For the Division, two slam-dunk scorecards have been created by project type.

1. Office and Office-Industrial Projects (see Table 3.3, page 61)
2. Parking Facilities (see Table 3.4, page 63)

These two project types were chosen based on the following criteria. First, there is a large enough sample of projects of a particular type to draw conclusions from. Second, the scope of the project types is most applicable to the standard LEED Rating System as currently written.

The scorecards are helpful in estimating the most cost effective LEED points for a particular project type and for tracking progress during the design phases. The slam-dunk scorecard should be updated yearly to accurately reflect the status of LEED achievement.

Credits marked 'Easy': The concept behind the slam-dunk scorecard is that the credits marked 'Easy' with a green shaded box are consistently achieved by Metro Transit Division projects with little work or additional cost. These credits or prerequisites should always be pursued by Transit projects, and are likely candidates for inclusion in County of Division Design Standards or Master Specifications.

Credits marked 'Difficult': Credits listed as difficult indicate that the majority of projects do not qualify, because they are not applicable to the project type or are currently cost prohibitive.

Credits marked 'Moderate': Projects should focus first on 'Easy' credits and then on the 'Moderate' ones. 'Moderate' credits represent those with some variability from project to project based on scope, phase at introduction and environmental and project goals. The bulk of project LEED attention would therefore be on credits noted as 'Moderate' as the 'Easy' credits should become standardized by the Transit Division.

King County Transit Division Slam-Dunk Scorecard 1: Office / Office Industrial Projects

The Metro Transit Division Office / Office Industrial slam-dunk scorecard was created using the scorecard from three projects:

1. Atlantic / Central Base Tire & Millwright Shop

2. Communications and Control Center

3. Power Distribution Headquarters

Further analysis of the 'Moderate' credits is recommended to determine which is most cost effective in the short term. Life cycle cost analysis (LCCA) is an effective method to determine the feasibility of implementing specific measures. LCCA is used to determine that a strategy may have a higher first cost that will likely result in a savings of maintenance and operating costs over the long run. Refer to Table 3.3 for the slam-dunk scorecard for Office / Office Industrial Projects.

Table 3.3: King County Transit Division Slam-Dunk Scorecard 1: Office/Office Industrial Projects

Metro Transit Division 2003 LEED Assessment Report
King County

LEED™ Slam-Dunk Scorecard 1
Office / Office Industrial Projects

24 | 28 | 14 Total Project Score — Possible Points 69

Certified: 26 to 32 points **Silver:** 33 to 38 points **Gold:** 39 to 51 points **Platinum:** 52 or more points

5 | 8 | 1 Sustainable Sites — Possible Points 14

easy	mod.	diff.			
0			Prereq 1	Erosion & Sedimentation Control	
1			Credit 1	Site Selection	1
	1		Credit 2	Urban Redevelopment	1
		1	Credit 3	Brownfield Redevelopment	1
1			Credit 4.1	Alternative Transportation, Public Transportation Access	1
1			Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
	1		Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1
	1		Credit 4.4	Alternative Transportation, Parking Capacity	1
	1		Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	1
	1		Credit 5.2	Reduced Site Disturbance, Development Footprint	1
	1		Credit 6.1	Stormwater Management, Rate or Quantity	1
1			Credit 6.2	Stormwater Management, Treatment	1
1			Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof Surfaces	1
	1		Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof Surfaces	1
	1		Credit 8	Light Pollution Reduction	1

2 | 3 | Water Efficiency — Possible Points 5

easy	mod.	diff.			
1			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
1			Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
	1		Credit 2	Innovative Wastewater Technologies	1
	1		Credit 3.1	Water Use Reduction, 20% Reduction	1
	1		Credit 3.2	Water Use Reduction, 30% Reduction	1

3 | 5 | 6 Energy & Atmosphere — Possible Points 17

easy	mod.	diff.			
0			Prereq 1	Fundamental Building Systems Commissioning	
0			Prereq 2	Minimum Energy Performance	
0			Prereq 3	CFC Reduction in HVAC&R Equipment	
2			Credit 1.1	Optimize Energy Performance, 20% New / 10% Existing	2
	2		Credit 1.2	Optimize Energy Performance, 30% New / 20% Existing	2
		1	Credit 1.3	Optimize Energy Performance, 40% New / 30% Existing	2
		1	Credit 1.4	Optimize Energy Performance, 50% New / 40% Existing	2
		1	Credit 1.5	Optimize Energy Performance, 60% New / 50% Existing	2
		1	Credit 2.1	Renewable Energy, 5%	1
		1	Credit 2.2	Renewable Energy, 10%	1
		1	Credit 2.3	Renewable Energy, 20%	1
1			Credit 3	Additional Commissioning	1
	1		Credit 4	Ozone Depletion	1
	1		Credit 5	Measurement & Verification	1
	1		Credit 6	Green Power	1

5 | 2 | 6 Materials & Resources — Possible Points 13

easy	mod.	diff.			
0			Prereq 1	Storage & Collection of Recyclables	
		1	Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	1
		1	Credit 1.2	Building Reuse, Maintain 100% of Existing Shell	1
		1	Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	Construction Waste Management, Divert 50%	1
1			Credit 2.2	Construction Waste Management, Divert 75%	1
		1	Credit 3.1	Resource Reuse, Specify 5%	1
		1	Credit 3.2	Resource Reuse, Specify 10%	1
1			Credit 4.1	Recycled Content, Specify 25%	1
	1		Credit 4.2	Recycled Content, Specify 50%	1
1			Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	1
1			Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	Rapidly Renewable Materials	1
	1		Credit 7	Certified Wood	1

8 | 6 | 1 Indoor Environmental Quality — Possible Points 15

easy	mod.	diff.			
0			Prereq 1	Minimum IAQ Performance	
0			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Carbon Dioxide (CO_2) Monitoring	1
	1		Credit 2	Increase Ventilation Effectiveness	1
1			Credit 3.1	Construction IAQ Management Plan, During Construction	1
1			Credit 3.2	Construction IAQ Management Plan, Before Occupancy	1
	1		Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1
1			Credit 4.2	Low-Emitting Materials, Paints	1
1			Credit 4.3	Low-Emitting Materials, Carpet	1
1			Credit 4.4	Low-Emitting Materials, Composite Wood	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems, Perimeter	1
	1		Credit 6.2	Controllability of Systems, Non-Perimeter	1
1			Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1
	1		Credit 7.2	Thermal Comfort, Permanent Monitoring System	1
	1		Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1
	1		Credit 8.2	Daylight & Views, Views for 90% of Spaces	1

1 | 4 | Innovation & Design Process — Possible Points 5

easy	mod.	diff.			
	1		Credit 1.1	Innovation in Design: Specific Title	1
	1		Credit 1.2	Innovation in Design: Specific Title	1
	1		Credit 1.3	Innovation in Design: Specific Title	1
	1		Credit 1.4	Innovation in Design: Specific Title	1
1			Credit 2	LEED™ Accredited Professional	1

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King County Transit Division Slam-Dunk Scorecard 2: Parking Facilities

The Metro Transit Division Parking Facilities slam-dunk scorecard was created using the scorecard from the five projects listed below. The Atlantic / Central Base North Yard was omitted from this calculation, because so few of the credits applied to this type of parking facility.

1. Atlantic / Central Base Employee Parking Garage
2. Eastgate Park & Ride / Interim Lot
3. Redondo Heights Park & Ride
4. Issaquah Highlands Park & Ride / Interim Lot,
5. Burien Transit Center

For this type of construction project, few of the Materials & Resources and Indoor Environmental Quality credits and prerequisites apply. For the slam-dunk scorecard, credits determined 'Not-Applicable,' are marked as 'Difficult' and shaded in red. Refer to Table 3.4 for the slam-dunk scorecard for Parking Facilities.

Table 3.4: King County Transit Division Slam-Dunk Scorecard 2: Parking Facilities

Metro Transit Division 2003 LEED Assessment Report
King County

LEED™ Slam-Dunk Scorecard 2
Parking Facilities

14 23 29 Total Project Score — Possible Points 69

Certified: 26 to 32 points **Silver:** 33 to 38 points **Gold:** 39 to 51 points **Platinum:** 52 or more points

5 8 1 Sustainable Sites — Possible Points 14

easy	mod.	diff.			
0			Prereq 1	Erosion & Sedimentation Control	
1			Credit 1	Site Selection	1
	1		Credit 2	Urban Redevelopment	1
		1	Credit 3	Brownfield Redevelopment	1
1			Credit 4.1	Alternative Transportation, Public Transportation Access	1
1			Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
	1		Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1
	1		Credit 4.4	Alternative Transportation, Parking Capacity	1
	1		Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	1
	1		Credit 5.2	Reduced Site Disturbance, Development Footprint	1
	1		Credit 6.1	Stormwater Management, Rate or Quantity	1
1			Credit 6.2	Stormwater Management, Treatment	1
1			Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof Surfaces	1
	1		Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof Surfaces	1
	1		Credit 8	Light Pollution Reduction	1

2 1 2 Water Efficiency — Possible Points 5

easy	mod.	diff.			
1			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
1			Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
		1	Credit 2	Innovative Wastewater Technologies	1
	1		Credit 3.1	Water Use Reduction, 20% Reduction	1
		1	Credit 3.2	Water Use Reduction, 30% Reduction	1

2 5 7 Energy & Atmosphere — Possible Points 17

easy	mod.	diff.			
0			Prereq 1	Fundamental Building Systems Commissioning	
0			Prereq 2	Minimum Energy Performance	
0			Prereq 3	CFC Reduction in HVAC&R Equipment	
2			Credit 1.1	Optimize Energy Performance, 20% New / 10% Existing	2
	2		Credit 1.2	Optimize Energy Performance, 30% New / 20% Existing	2
		1	Credit 1.3	Optimize Energy Performance, 40% New / 30% Existing	2
		1	Credit 1.4	Optimize Energy Performance, 50% New / 40% Existing	2
		1	Credit 1.5	Optimize Energy Performance, 60% New / 50% Existing	2
		1	Credit 2.1	Renewable Energy, 5%	1
		1	Credit 2.2	Renewable Energy, 10%	1
		1	Credit 2.3	Renewable Energy, 20%	1
		1	Credit 3	Additional Commissioning	1
	1		Credit 4	Ozone Depletion	1
	1		Credit 5	Measurement & Verification	1
	1		Credit 6	Green Power	1

Prepared by Paladino and Company Inc., Copyright 2004

4 2 7 Materials & Resources — Possible Points 13

easy	mod.	diff.			
0			Prereq 1	Storage & Collection of Recyclables	
		1	Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	1
		1	Credit 1.2	Building Reuse, Maintain 100% of Existing Shell	1
		1	Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	Construction Waste Management, Divert 50%	1
1			Credit 2.2	Construction Waste Management, Divert 75%	1
		1	Credit 3.1	Resource Reuse, Specify 5%	1
		1	Credit 3.2	Resource Reuse, Specify 10%	1
1			Credit 4.1	Recycled Content, Specify 25%	1
	1		Credit 4.2	Recycled Content, Specify 50%	1
1			Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	1
	1		Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

3 12 Indoor Environmental Quality — Possible Points 15

easy	mod.	diff.			
		0	Prereq 1	Minimum IAQ Performance	
0			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Carbon Dioxide (CO_2) Monitoring	1
		1	Credit 2	Increase Ventilation Effectiveness	1
		1	Credit 3.1	Construction IAQ Management Plan, During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan, Before Occupancy	1
	1		Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1
	1		Credit 4.2	Low-Emitting Materials, Paints	1
		1	Credit 4.3	Low-Emitting Materials, Carpet	1
		1	Credit 4.4	Low-Emitting Materials, Composite Wood	1
	1		Credit 5	Indoor Chemical and Pollutant Source Control	1
		1	Credit 6.1	Controllability of Systems, Perimeter	1
		1	Credit 6.2	Controllability of Systems, Non-Perimeter	1
		1	Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1
		1	Credit 7.2	Thermal Comfort, Permanent Monitoring System	1
		1	Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1
		1	Credit 8.2	Daylight & Views, Views for 90% of Spaces	1

1 4 Innovation & Design Process — Possible Points 5

easy	mod.	diff.			
	1		Credit 1.1	Innovation in Design: Specific Title	1
	1		Credit 1.2	Innovation in Design: Specific Title	1
	1		Credit 1.3	Innovation in Design: Specific Title	1
	1		Credit 1.4	Innovation in Design: Specific Title	1
1			Credit 2	LEED™ Accredited Professional	1

King County Transit Division LEED & Policy Recommendations

Many issues and challenges identified within the Transit Division will need to be addressed either within the Transit Division or at the County level to have the greatest impact.

1. Prioritize 'Moderate' credits from the LEED Slam Dunk Scorecard (see pages 59-63)

Investigate the potential for determining County priorities and policies for purchasing green power, installing renewable energy generation equipment, harvesting rain water, measurement and verification, and recycling at park and ride facilities. A coordination process for construction and operations budgets, including life cycle analysis, is needed.

2. Project Budgeting-Construction vs. Operations Line Items

Develop flexible contingency budgets to allow design teams to incorporate sustainability credits as the project details become available. Develop methods to allow acceptance of grant funds (after project budgeting) to promote sustainable energy, operations and education.

3. Develop Standard Selection Criteria

Include sustainability and LEED expertise in design team and contractor selection criteria. This language should be built into a master format that is utilized for all projects, whether they are applying for a LEED rating or LEED equivalency. Furthermore, master contractual agreements should be created that specify the Terms & Conditions that complement the design efforts to meet LEED or LEED strategies. A penalty clause could be built into project terms for failure to follow the specifications and achieve LEED points.

4. Hold Transit Project Manager Coordination Meetings

Project Managers could meet regularly with each other to coordinate and compare LEED experiences, tools and progress. Status updates could provide valuable insight into credit nuances, help streamline the LEED application process and provide value throughout the Division. This strategy is particularly important for projects located at the A/C Base. Pursuing a 'campus approach' over the entire site will require coordination of all Project Managers to adequately share amenities over the site.

5. Meet or Exceed Most Stringent Applicable Standards

During the course of the interview process, it was revealed that projects are following the local jurisdictional code, regardless of whether King County requirements are stricter. Create a Policy to follow the most stringent regulations regardless of the requirements set by the overseeing jurisdiction. Where the requirements set forth by the LEED Reference Guide are most stringent, these should be followed, and incorporated into King County Master Specifications.

7. Understand the Skills and Weaknesses of the Team

The team recognized a need for sustainable design expertise. The County will need to consider sustainable design expertise, both internal and external, when it assembles project teams. King County budgets often allow for external expertise as it relates to meeting the GBI.

Furthermore, the Transit Division could offer incentives to Project Managers to fulfill a higher LEED achievement, or to become LEED Accredited Professionals. LEED AP's are familiar with the requirements of the LEED Rating System, and can add value to the team by streamlining the application process.

8. Create Institutional Knowledge Through Tools

Most of the tools that would be useful for the Transit Division would also benefit other departments. Depending on available resources and County procedural requirements, County approval and County-wide resources or personnel may be necessary to develop these tools. The first step is to identify the tools that exist, and to prioritize suggested tools for implementation. The second step is to create the tools required to simply the LEED and sustainable building process. This may include hiring external sustainable design expertise to create tools for the County. Existing tools identified throughout this process are as follows:

1. King County Construction Waste Management Specifications are available on the Internet at http://dnr.metrokc.gov/swd/bizprog/sus_build/01524%20ConWasteMgmt2003.pdf. Note that the Power Distribution Headquarter has an updated construction waste management specification that may be used instead.

2. Furthermore, the LEED Supplement for King County is available on the Internet at http://dnr.metrokc.gov/swd/leed/default.asp . This supplement offers guidance and interpretations for local projects in King County for multiple project types, including offices, parks and industrial.

3. The Business and Industry Resource Venture hosts a number of stormwater pollution prevention publications, which can be used to document SS prerequisite 1. They are available online at http://www.resourceventure.org/rv/issues/stormwater/publications/index.php

4. The KC Green Building Team has begun the process of developing tools like those listed above, and its members are resources themselves, able to provide insight and information to Project Managers.

5. The Metro Transit Division 2002 and 2003 LEED Assessment Reports may be posted on-line, and utilized county-wide to evaluate progress and to prioritize action items. Furthermore, the LEED Scorecards within this report can be used to understand what projects have achieved specific credits. Table 2.2 identified which Project Managers to talk to for more information about each project.

6. The LEED Slam-Dunk Scorecard for Office and Parking Facilities are included in Tables 3.3 and 3.4 of this report. These scorecards act as blueprints for the LEED process, and single out the 'Moderate' credits as those to pursue.

7. Eco charrettes were identified as a potential source of early design guidance, and as a method to set goals, identify barriers and create tactics to overcome them.

8. Update the County or Transit Division Master Specifications to include green design and LEED criteria, strategies, materials, products, instructions to contractors, and contractor LEED submittals. Use current LEED projects as a basis, if necessary. Relevant sections include:

    a. Construction Waste Management Section.

    b. HVAC systems and components.

    c. Energy efficient interior and exterior lighting.

    d. Parking garage lighting guidelines

    e. Low-flow plumbing fixtures.

    f. Landscape materials and high efficiency irrigation systems.

    g. Reflective roofing materials.

    h. Paving.

    i. Measurement & Verification.

j. Additional Commissioning.

k. Low VOC materials.

l. Certified wood.

m. Local, recycled content materials.

n. RFQ and contractual language.

o. Indoor Air Quality Management.

p. Template for a Division 1 section for LEED and Sustainable Design Procedures.

9. Interdepartmental database that includes project data, including LEED credits pursued and achieved, costs and benefits from sustainable design, including first costs, predicted and actual operational savings (water, energy, construction waste disposal) and productivity (through before and after department sick day counts etc.). Furthermore, include information on credits achieved by various jurisdictions, similar to Table 3.2 provided within this report.

10. Create a resource library with reference standards, LEED Rating System, Toolkit for Municipalities (USGBC document), hard data from other projects (e.g. King Street Center), etc. for use by King County Project Managers and the Green Team.

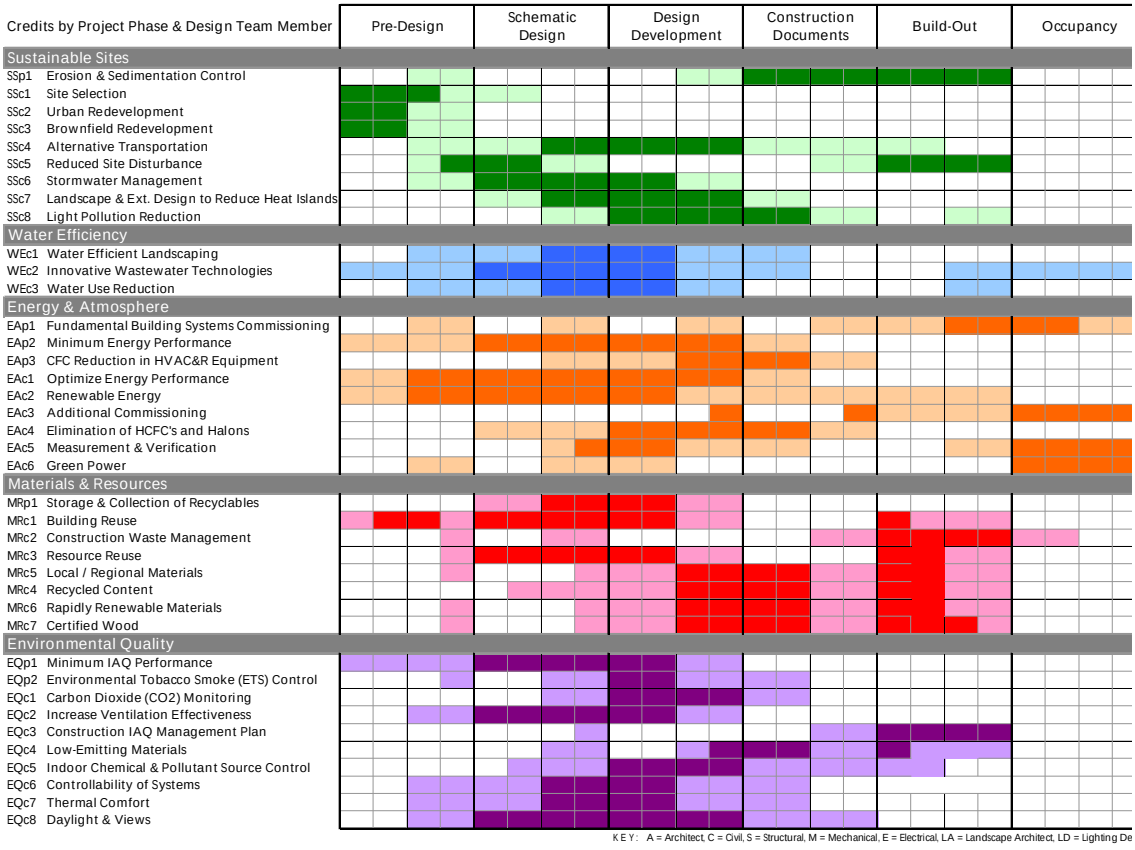
11. Develop a case study for each completed Transit Division project, similar in layout and content to the A/C Base Expansion Demolition. This case study could be used to document the achievements, and barriers of each project. Furthermore, it could be used as an educational tool for both King County Project Managers and the public.

12. Contractor training will help contractors new to the LEED process understand the nuances of Rating System requirements and submittal documentation.

13. Post-occupancy evaluation is a valuable source of information to help the County understand the effectiveness of strategies and measures incorporated in the project. Lessons learned and knowledge gained from current projects can direct future projects.

14. Project Manager training can benefit the County by providing resources and tools to understanding the strategies and technologies available throughout the process. Project managers could benefit from training or other method of communication within the County regarding what tools are available. One examples of a LEED project management tool offered by Paladino is added in Table 3.5.

Table 3.5: LEED Credits by Project Phase



Conclusions Based Upon the Green Building Initiative

King County has made a significant environmental commitment to encourage and incorporate the use of green building practices in all new construction, remodels, and renovations through the Green Building Initiative.

The King County Transit Division has embraced the Green Building Initiative and is incorporating LEED principles on a wide selection of building projects. Of the 13 projects reviewed nine are covered by the King County Green Building Initiative and are therefore encouraged by the initiative to either achieve a LEED rating or, due to scope, incorporate relevant LEED principles. Four of the nine projects are of sufficient scope to apply for LEED certification, and three are currently registered with the USGBC. The four projects not covered by the GBI have opted to incorporate LEED principals, where relevant.

All of the projects in design development prior to adoption of the GBI have opted to incorporate LEED principles, and one of these is targeting a LEED Rating of Certified. For those projects in the planning and predesign phases, a minimum LEED Rating of Certified has been identified.

The first round of KC Transit LEED projects has served as a learning experience for Transit Project Managers. The collective experience and knowledge gained from the Transit portfolio of LEED projects will bring down the costs associated with LEED, as more projects are completed. This knowledge is a valuable resource that should be shared, within the department, within the County, and with the public, to build upon the GBI.

The LEED system itself can be used as the basis for a larger progress measurement tool and organizational framework. Many of the strategies now being implemented on Transit projects have the potential to become part of the common language of the design teams, a major step in the right direction. However, the tools need to be put into place to build on the Transit Division's initial momentum.

While LEED is being pursued at the project level, the King County Green Team should work with the Transit division on the process of internal education and resource development. Furthermore, a database tracking system will allow the early projects to serve as learning tools and resources to inform future projects. The next steps therefore should look toward developing institutional knowledge, at three key levels: Division, County and Public.